

BOSTON PUBLIC LIBRARY



3 9999 06317 489 8

977



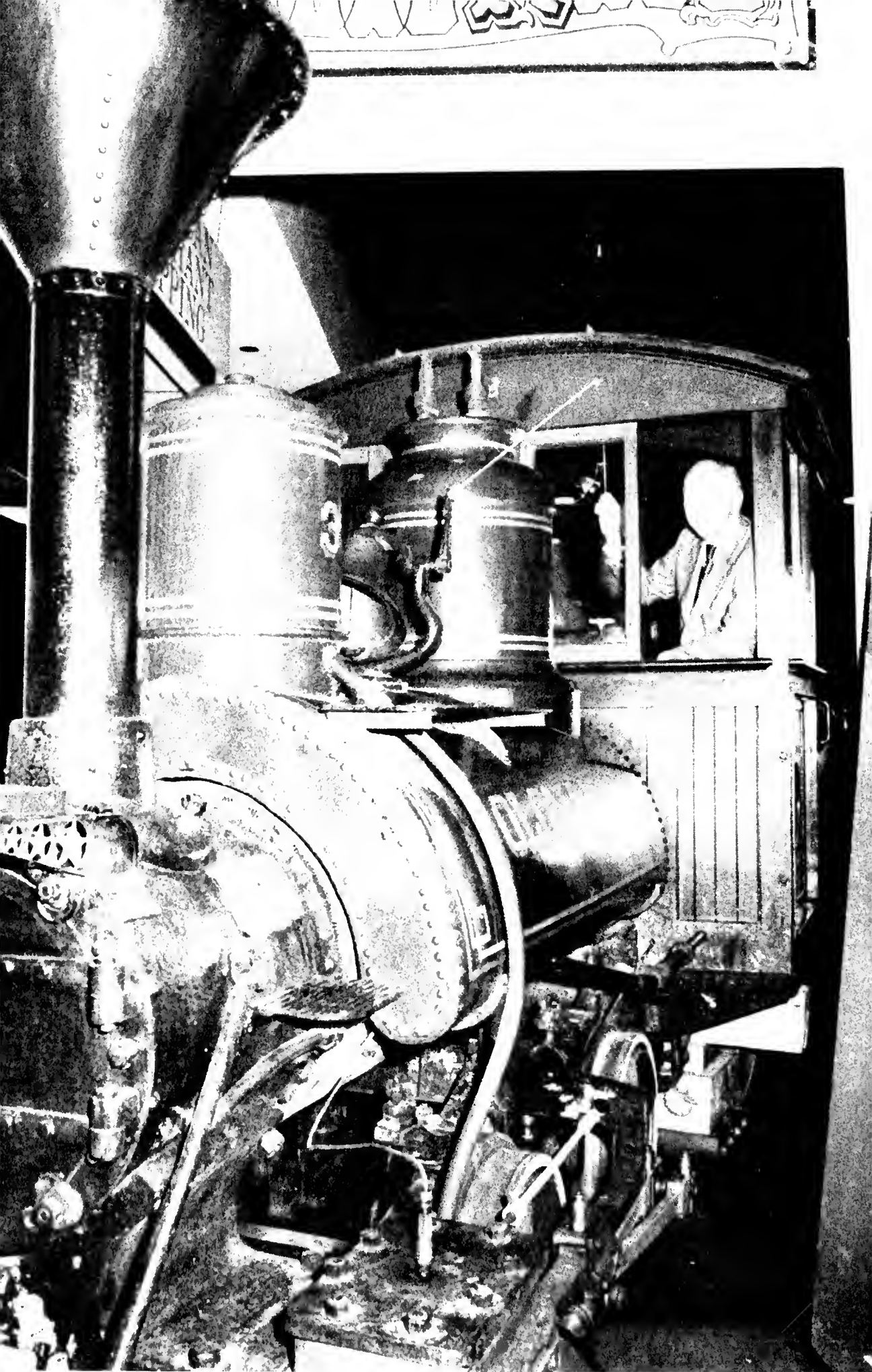
SMITHSONIAN YEAR • 1977

Programs and Activities

SMITHSONIAN YEAR • 1977

Programs and Activities

The *Smithsonian Year 1977, Statement by the Secretary*, including the Financial Report of the Smithsonian Institution, is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.



With Secretary Ripley at the throttle, Olomana was installed in the National Museum of History and Technology on May 19, 1977. Olomana hauled sugarcane for sixty-two seasons in Hawaii, and is typical of small steam locomotives used by industrial railways from circa 1870 to 1940.

SMITHSONIAN YEAR • 1977

Programs and Activities

OCTOBER 1, 1976, THROUGH
SEPTEMBER 30, 1977



Smithsonian Institution Press • City of Washington • 1978

Library of Congress Catalog Card Number 67-7980

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C., 20402 (paper cover) Stock Number: 047-000-00348-2

\$ 5.25

The Smithsonian Institution

The Smithsonian Institution was created by act of Congress in 1846 in accordance with the terms of the will of James Smithson of England, who in 1826 bequeathed his property to the United States of America "to found at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men." After receiving the property and accepting the trust, Congress incorporated the Institution in an "establishment," whose statutory members are the President, the Vice President, the Chief Justice, and the heads of the executive departments, and vested responsibility for administering the trust in the Smithsonian Board of Regents.

THE ESTABLISHMENT

Jimmy Carter, *President of the United States*

Walter F. Mondale, *Vice President of the United States*

Warren E. Burger, *Chief Justice of the United States*

Cyrus R. Vance, *Secretary of State*

W. Michael Blumenthal, *Secretary of the Treasury*

Harold Brown, *Secretary of Defense*

Griffin B. Bell, *Attorney General*

Cecil D. Andrus, *Secretary of the Interior*

Bob S. Bergland, *Secretary of Agriculture*

Juanita M. Kreps, *Secretary of Commerce*

F. Ray Marshall, *Secretary of Labor*

Joseph A. Califano, Jr., *Secretary of Health, Education, and Welfare*

Patricia Roberts Harris, *Secretary of Housing and Urban Development*

Brock Adams, *Secretary of Transportation*

James R. Schlesinger, *Secretary of Energy*

Board of Regents and Secretary • September 30, 1977

REGENTS OF THE INSTITUTION	Warren E. Burger, <i>Chief Justice of the United States, Chancellor</i> Walter F. Mondale, <i>Vice President of the United States</i> Henry M. Jackson, <i>Member of the Senate</i> Barry Goldwater, <i>Member of the Senate</i> Claiborne Pell, <i>Member of the Senate</i> George H. Mahon, <i>Member of the House of Representatives</i> Elford A. Cederberg, <i>Member of the House of Representatives</i> Corinne C. Boggs, <i>Member of the House of Representatives</i> J. Paul Austin, <i>citizen of Georgia</i> John Nicholas Brown, <i>citizen of Rhode Island</i> William A. M. Burden, <i>citizen of New York</i> Murray Gell-Mann, <i>citizen of California</i> Caryl P. Haskins, <i>citizen of the District of Columbia</i> A. Leon Higginbotham, Jr., <i>citizen of Pennsylvania</i> Thomas J. Watson, Jr., <i>citizen of Connecticut</i> James E. Webb, <i>citizen of the District of Columbia</i>
EXECUTIVE COMMITTEE	Warren E. Burger, <i>Chancellor (Board of Regents)</i> William A. M. Burden Caryl P. Haskins James E. Webb (<i>Chairman</i>)
THE SECRETARY	S. Dillon Ripley Dorothy Rosenberg, <i>Executive Assistant to the Secretary</i> John F. Jameson, <i>Assistant Secretary for Administration</i> Charles Blitzer, <i>Assistant Secretary for History and Art</i> David Challinor, <i>Assistant Secretary for Science</i> Paul N. Perrot, <i>Assistant Secretary for Museum Programs</i> Julian T. Euell, <i>Assistant Secretary for Public Service</i> T. Ames Wheeler, <i>Treasurer</i> Peter G. Powers, <i>General Counsel</i> Richard L. Ault, <i>Director, Support Activities</i> James McK. Symington, <i>Director, Membership and Development</i> Lawrence E. Taylor, <i>Coordinator, Public Information</i>

CONTENTS

<i>page</i>	v	THE SMITHSONIAN INSTITUTION
	vi	BOARD OF REGENTS AND SECRETARY
	1	CHRONOLOGY
	15	SCIENCE
	16	Chesapeake Bay Center for Environmental Studies
	24	Fort Pierce Bureau
	27	National Air and Space Museum
	39	National Museum of Man, Center for the Study of Man
	45	National Museum of Natural History
	57	National Zoological Park
	64	Office of International Programs
	65	Radiation Biology Laboratory
	73	Smithsonian Astrophysical Observatory
	87	Smithsonian Tropical Research Institute
	97	HISTORY AND ART
	97	Archives of American Art
	100	Cooper-Hewitt Museum of Design and Decorative Arts
	102	Freer Gallery of Art
	106	Hirshhorn Museum and Sculpture Garden
	113	Joseph Henry Papers
	114	National Collection of Fine Arts
	120	National Museum of History and Technology
	133	National Portrait Gallery
	137	Office of Academic Studies
	138	Office of American and Folklife Studies
	141	MUSEUM PROGRAMS
	143	Conservation Analytical Laboratory
	141	National Museum Act Program
	148	Office of Exhibits Central
	149	Office of Horticulture

MUSEUM PROGRAMS, *Continued*

page	150	Office of Museum Programs
	153	Office of the Registrar
	154	Smithsonian Institution Archives
	155	Smithsonian Institution Libraries
	159	Smithsonian Institution Traveling Exhibition Service
	165	PUBLIC SERVICE
	166	Anacostia Neighborhood Museum
	169	Division of Performing Arts
	173	Office of Elementary and Secondary Education
	175	Office of Smithsonian Symposia and Seminars
	179	Office of Telecommunications
	180	Smithsonian Institution Press
	181	<i>Smithsonian</i> Magazine
	183	Smithsonian Resident Associates
	186	Visitor Information and Associates' Reception Center
	189	MEMBERSHIP AND DEVELOPMENT
	195	ADMINISTRATION
	201	WOODROW WILSON INTERNATIONAL CENTER FOR SCHOLARS
	204	JOHN F. KENNEDY CENTER FOR THE PERFORMING ARTS
	223	READING IS FUNDAMENTAL, INC.
	227	SMITHSONIAN SCIENCE INFORMATION EXCHANGE, INC.
	231	NATIONAL GALLERY OF ART
	235	APPENDICES

CHRONOLOGY

The following is a representative selection of Smithsonian events during the year. No attempt has been made to make it a complete compilation of all Smithsonian activities.

1976

October

PUBLICATION: Inaugural edition of *The Wilson Quarterly* published by the Woodrow Wilson International Center for Scholars.

SCIENCE: Volcano monitoring stations, initiated by National Museum of Natural History scientist Dr. Richard Fiske, established on the Lesser Antillean Islands of Martinique, St. Vincent, and Montserrat, similar to those established earlier on the flanks of Guadeloupe's threatening La-Soufrière Volcano.

October 1

NEW DEPARTMENT: National Portrait Gallery established a Department of Photographs, made possible through change in charter redefining portraiture for the purpose of acquisitions.

EXHIBITION: Smithsonian Institution Traveling Exhibition Service exhibition (Bicentennial) "Belgian Gunmaking and American History" began tour at Smithsonian Institution's National Museum of History and Technology.

October 3

CONCERT SERIES: First of five Blues Concerts, at the National Museum of Natural History, presented by the Division of Performing Arts.

October 6

OPENING: The Archives of American Art established its Midwest Regional Office at the Detroit Institute of Arts, with remarks by the Mayor of Detroit.

LECTURE SERIES: First of eight lectures in a series titled "New Windows on the Universe" presented by the National Air and Space Museum and the Harvard-Smithsonian Center for Astrophysics.

- October 7 **OPENING:** Cooper-Hewitt Museum of Design and Decorative Arts reopened to the public in New York City featuring inaugural exhibition "MAN transFORMS, Aspects of Design."
- AWARD:** First International Award for Distinguished Contributions to Natural History presented to George Gaylord Simpson, paleontologist and evolutionary theorist, for his contributions as researcher, teacher, and philosopher.
- October 10 **CONCERT SERIES:** First of five Jazz Heritage concerts presented by the Division of Performing Arts at the National Museum of Natural History.
- October 14 **EXHIBITION:** "Hans Hofmann," the first large survey of this American artist's work since his death in 1966, opened at the Hirshhorn Museum and Sculpture Garden.
- October 15 **EXHIBITION:** "The American Presidency in Political Cartoons" opened at the National Portrait Gallery.
- October 18 **AWARD:** The Edward W. Browning Achievement Award for Conserving the Environment presented to Dr. Joel W. Hedgpeth, Professor Emeritus, Oregon State University, for his lifetime contributions in research and education in the field of marine biology.
- PERMANENT INSTALLATION:** National Collection of Fine Arts opened the John Gellatly Gallery, with one hundred European and Asiatic art objects, part of a collection of paintings and art objects donated to the Smithsonian in 1929.
- October 19 **EXHIBITION:** "Americas: The Decorative Arts in Latin America in the Era of the Revolution," a major Bicentennial exhibition, opened at the Renwick Gallery.
- October 20 **ACQUISITION:** Bush dog, one of many animals acquired by purchase or loan by the National Zoo, was received on loan from zoo at Frankfurt, Germany.
- October 23 **MILESTONE:** One hundred and fifty years ago, James Smithson wrote his will leading to the creation of the Smithsonian Institution.
- October 24 **CONCERT SERIES:** First of six American Popular Song programs presented by the Division of Performing Arts at the National Museum of Natural History.
- VISIT:** Soviet space scientists visited the Center for Astrophysics in Cambridge, Massachusetts, as part of a nationwide tour to further Russian-American space efforts.
- October 27 **AWARD:** Arts and Industries Building received Historic

Preservation Award from the Washington Metropolitan Chapter of the American Institute of Architects.

- October 30 EXHIBITION: "Robert Rauschenberg," featuring 150 works, opened at the National Collection of Fine Arts, later traveling to the Museum of Modern Art in New York, the San Francisco Museum of Modern Art, the Albright-Knox Art Gallery, and The Art Institute of Chicago.
- November 1 CONCERT SERIES: Theatre Chamber Players, in residence at the Smithsonian, performed in the first of their five-concert series.
- November 6 CONCERT SERIES: First of three-concert series featuring "Music from Marlboro" presented by the Division of Performing Arts at the National Museum of Natural History.
- November 7 CONCERT SERIES: First of three programs in the Jazz Connoisseur series presented by the Division of Performing Arts at the Hirshhorn Museum and Sculpture Garden.
- November 8 CONCERT SERIES: The Smithsonian Chamber Players began a new series of fifteen concerts, presented by the Division of Performing Arts and the Division of Musical Instruments at the National Museum of History and Technology.
- November 11 EXHIBITION: "Alfred Leslie," an exhibition of works by a major American realist painter, opened at the Hirshhorn Museum and Sculpture Garden.
- November 15 VISIT: Nine astronomers from the People's Republic of China visited the Smithsonian-Harvard Center for Astrophysics in Cambridge, Massachusetts, as part of a month-long scientific exchange.
- November 19 EXHIBITION: "Chac-Mool: A Bicentennial Loan from Mexico," an official showing of one of Mexico's national treasures, the Chac-Mool from Chichen-Itza (Maya-Toltec sculpture: 10th-12th centuries, A.D.), opened at the Hirshhorn Museum and Sculpture Garden.
- EXHIBITION: "Jacob Kainen: Prints, a Retrospective" opened at the National Collection of Fine Arts.
- EXHIBITION: "The Art of Poetry: 1950-1975" opened at the National Collection of Fine Arts as part of a citywide poetry and visual arts celebration.
- November 23 EXHIBITION: "Treasures of Cyprus" opened at the National Museum of Natural History. The Smithsonian Institution Traveling Exhibition Service circulated the exhibit as part of the International Salute to the States Bicentennial program.

- December 1 SPECIAL EVENT: The Anacostia Neighborhood Museum began a month-long series of Christmas-season activities, including a workshop on the African Kwanza festival, and marching bands.
- December 1–2 EXHIBITIONS: Two exhibitions opened as part of the District of Columbia's celebration featuring poetry and the visual arts in the community: "A Touch of the Poet: Portraits from the Permanent Collection," National Portrait Gallery; and "E. E. Cummings: The Poet as Artist," Hirshhorn Museum and Sculpture Garden.
- December 2 EXHIBITION: "Peter Plagens: Works on Paper," a West Coast artist's first one-man show in a major museum, opened at the Hirshhorn Museum and Sculpture Garden.
- FILM: Smithsonian-produced film *Celebrating a Century* had its premiere showing for museum visitors, beginning a regular feature at the Arts and Industries Building and the Museum of History and Technology. It was telecast nationally May 11–15 via Public Broadcasting Service. It also won a CINE Golden Eagle Award.
- December 4 OPENING: The Naturalist Center, with reference books and equipment for research and study by serious amateur naturalists, opened as the final phase of the West Court project at the National Museum of Natural History.
- SPECIAL EVENT: "A Hirshhorn Holiday: An Adventure in Art and Illusion," four hours of free entertainment and performances for children, sponsored by the Women's Committee of the Smithsonian Associates, was presented at the Hirshhorn Museum and Sculpture Gardens.
- December 8 DOUBLEDAY LECTURE: John Updike spoke on "The Written Word" as part of the lecture series presented at the National Museum of History and Technology.
- December 9 EXHIBITION: "Not a Model Boy" opened at the National Portrait Gallery marking the one hundredth anniversary of the publication of Mark Twain's *The Adventures of Tom Sawyer*.
- December 10–18 NATIONAL ASSOCIATES PROGRAM: Program for regional members of Smithsonian Associates presented in Peoria, Illinois, co-sponsored by the Lakeview Center for the Arts and Sciences, featured exhibitions, workshops, lectures, and performing arts events.
- December 15 EXHIBITION: "The Object as Poet" opened at the Renwick Gallery, examining the relationship of poetry to the poetic image in objects made by artists/craftsmen.

- December 15 EXHIBITION: "Edward Munch: The Major Graphics—A Bicentennial Exhibition from Norway" opened at the George Washington University and was circulated by the Smithsonian Institution Traveling Exhibition Service in the International Salute to the States program.
- December 16 EXHIBITION: "Person to Person," a multi-media exhibit marking the one-hundredth anniversary of the telephone, opened at the National Museum of History and Technology.
- December 22 EXHIBITION: "John White Alexander (1856–1915)," the first comprehensive exhibit of Alexander's work in sixty years, opened at the National Collection of Fine Arts.
- December 28 ACQUISITION: Nineteen Winslow Homer letters, some illustrated with sketches, acquired by the Archives of American Art.
- 1977
- January 10 EXHIBITIONS: "First Ladies Jewelry and Accessories and Presidential Inaugural Medals" opened at the National Museum of History and Technology, in tribute to the Presidential Inaugural.
- APPOINTMENT: United States Senator Barry Goldwater, of Arizona, appointed a Regent of the Smithsonian Institution.
- ACQUISITION: Pioneer 10 spacecraft displayed in the Milestones of Flight Gallery of the National Air and Space Museum.
- January 11 OPENING: The Silver Hill Museum, with several buildings of displays and the restoration facility of the National Air and Space Museum, opened for public tours at Silver Hill, Maryland.
- January 12 SPECIAL EVENT: President-Elect Jimmy Carter held a foreign affairs briefing in the Smithsonian Institution Building.
- January 15 EXHIBITION: "The President's Medal 1789–1977" opened at the National Portrait Gallery, exhibiting the medals of Presidents from George Washington to Jimmy Carter, and reviewing the origins and development of this form of American portraiture.
- REINSTALLATION: Hall of Presidents reopened by the National Portrait Gallery including newly acquired portraits of John Adams and Zachary Taylor.
- January 18–22 CONCERT SERIES: Eighty-five free concerts held in seven museums, under the direction of the Division of Perform-

ing Arts, in tribute to the inaugurations of President Carter and Vice President Mondale.

- January 20 APPOINTMENT: Walter F. Mondale became ex-officio member of the Regents of the Smithsonian Institution on his inauguration as Vice President.
- January 24 EXHIBITION: "Artists and Writers in America: Some Relationships" opened at the National Portrait Gallery by the Archives of American Art.
- APPOINTMENT: United States Senator Claiborne Pell, of Rhode Island, appointed a Regent of the Smithsonian Institution.
- January 26 DOUBLEDAY LECTURE: United States Congressman John Brademas of Indiana spoke at the National Museum of History and Technology on "Education in the Real World."
- January 29 EXHIBITION: "Locks from Iran: Pre-Islamic to the Twentieth Century," produced and circulated by the Smithsonian Institution Traveling Exhibition Service, opened at the National Museum of Natural History.
- January 29–February 6 NATIONAL ASSOCIATES PROGRAM: Program for regional members of Smithsonian Associates held in Milwaukee in co-sponsorship with the Milwaukee Art Center, the Milwaukee Public Museum, and Friends of the Museum, Inc., assisted by the Performing Arts Center, included exhibitions, workshops, lectures, and performing arts events.
- February 2 SYMPOSIUM: "20th Century Canadian Culture: A Symposium," an eleven-week series of lectures, panel discussions, and films on Canadian arts and humanities, opened at the Hirshhorn Museum and Sculpture Garden with the evening keynote address, "Canadian Culture Today," by Dr. Northrop Frye, and introductory remarks by Mrs. Walter Mondale and Mrs. Pierre Trudeau.
- OPENING: Education-Administration Building opened at the National Zoo as part of the Zoo's master plan for modernization.
- February 3 EXHIBITION: "14 Canadians: A Critic's Choice" opened at the Hirshhorn Museum and Sculpture Garden in conjunction with "20th Century Canadian Culture" symposium.
- February 6–20 NATIONAL ASSOCIATES PROGRAM: A program of exhibitions, lectures, workshops, and performing arts events held for Smithsonian Associates in Detroit, Michigan, co-sponsored by the Cranbrook Education Community, Detroit Historical Museum and Detroit Historical Society, and the Detroit Institute of Arts.

- February 10 ACQUISITION: A rare 1880 self-portrait by Mary Cassatt acquired by the National Portrait Gallery; one of only two painted by the American artist, who was a major figure in the French Impressionist movement.
- February 11 EXHIBITION: "Daniel Chester French: An American Sculptor" opened at the National Collection of Fine Arts, the first major retrospective of French's work.
- February 16 FILMS: Opening of thirteen-film series, produced by Wango Weng and presented by the China Institute in America, entitled *China: The Enduring Heritage* at the National Museum of Natural History.
- February 21 VISIT: United States Senator John Glenn, of Ohio, was the honored guest at a National Air and Space Museum luncheon to observe the fifteenth anniversary of the first American orbital flight. As an astronaut, Senator Glenn was the pilot of Friendship 7 which made the flight.
- February 28–
March 3 SCIENTIFIC WORKSHOP: One hundred scientists and science-related professionals attended conference on Watershed Research in Eastern North America, sponsored by the Chesapeake Bay Center for Environmental Sciences and the National Science Foundation and held at the Bay Center. Sixty scientific papers presented at the workshop have been published in one volume.
- March 1 AWARD: *America as Art*, a book by Joshua C. Taylor, Director, National Collection of Fine Arts, was chosen as one of five finalists in the history category for the twenty-eighth annual National Book Awards given by the American Academy and Institute of Arts and Letters. (See April 30.)
- March 1–11 NATIONAL ASSOCIATES PROGRAM: A regional program for Smithsonian Associates held in Seattle, Washington, in co-sponsorship with the Pacific Science Center, the Seattle Art Museum, the Seattle Historical Society, and the Museum of History and Industry, and assisted by the Department of Music, University of Washington, featured performing arts events, exhibitions, workshops, and lectures.
- March 3 EXHIBITION: "Royal Pavillion at Brighton" opened at the Cooper-Hewitt Museum of Design and Decorative Arts, New York City.
- March 4 APPOINTMENT: United States Congresswoman Corinne C. (Lindy) Boggs of Louisiana appointed a Regent of the Smithsonian Institution, the first woman to hold this position.
- March 6 EXHIBITION: "The Anacostia Story" opened at the Anacostia Neighborhood Museum, with focus on the area's history from 1608 to 1930.

- March 9–17 NATIONAL ASSOCIATES PROGRAM: A program for Smithsonian Associates held in Portland, Oregon, in co-sponsorship with the Oregon Historical Society and the Portland Art Museum.
- March 16 DOUBLEDAY LECTURE: Charles Eames, artisan and designer, spoke at the National Museum of History and Technology on "Education Outside the Educational Establishment."
- March 17 EXHIBITION: "Rails of the World: Paintings by J. Fenwick Lansdowne" opened at the National Museum of Natural History. The exhibit was circulated by the Smithsonian Institution Traveling Exhibition Service.
- March 18 EXHIBITION: "Paint on Wood: Decorated American Furniture Since the 17th Century" opened at the Renwick Gallery.
- March 25 EXHIBITION: "Acquisitions: 1974–1977" presented the Hirshhorn Museum and Sculpture Garden's more than one hundred thirty works acquired through gift and purchase since the Museum opened in October 1974.
- March 26 SPECIAL EVENT: Annual Kite Festival and Competition, sponsored by the Smithsonian Resident Associates and under the direction of Paul Garber, National Air and Space Museum, was held on the Mall.
- April 2 VISIT: First Lady Rosalynn Carter and daughter Amy visited the National Zoological Park.
- April 3 SPRING CELEBRATION: First of more than eighty musical events presented over a fifteen-day period on the grounds of the National Museum of History and Technology.
- April 5 MEETING: Assistant Secretary David Challinor met with President Anwar el-Sadat in Washington to discuss Smithsonian projects in Egypt.
- April 7 EXHIBITIONS: "Oriental Calligraphy," a major showing of calligraphy from China, Japan, and the Near East, and Biblical manuscripts from the 3rd to 17th centuries, opened at the Freer Gallery of Art.
- April 11–21 NATIONAL ASSOCIATES PROGRAM: A program for regional members of Smithsonian Associates held in Denver, Colorado, in co-sponsorship with the Denver Art Museum, the Denver Public Library, and the State Historical Society of Colorado.
- April 12 MILESTONE: Tenth anniversary of the Carousel on the Mall.
- April 20 DOUBLEDAY LECTURE: James M. Hester, Rector of the United Nations University, spoke at the National Museum of

History and Technology on "Education for a Changed World."

- April 20–27 NATIONAL ASSOCIATES PROGRAM: A regional program for Smithsonian Associates held in Minneapolis-St. Paul, Minnesota, in co-sponsorship with the Minnesota Historical Society, the Minneapolis Institute of Arts, the Science Museum in Minnesota, and the Walker Art Center, and with the assistance of the Department of Music, University of Minnesota.
- April 30 EXHIBITION: "America as Art," a major Bicentennial exhibition, opened at the National Collection of Fine Arts.
- May 1 NATIVE AMERICAN TRAINING PROGRAM: Dr. George Abrams, member of the Seneca Nation and Director of the Seneca Museum, arrived as the first participant in the training program organized by the Office of Museum Programs for the study of techniques and methods of museology.
- May 19 VISIT: His Holiness, the Sixteenth Gyalwa Karmapa, head of the Tibetan Buddhism sect Kagyu, toured the Smithsonian Institution.
- May 20 SYMPOSIUM: "The Life and Accomplishments of Charles A. Lindbergh" presented by the National Air and Space Museum in observance of the fiftieth anniversary of Lindbergh's solo flight across the Atlantic.
- EXHIBITION: "Painting and Sculpture in California: The Modern Era" opened at the National Collection of Fine Arts with 270 works created from 1900 to 1976 by 199 artists.
- May 21 EXHIBITION: "American Crafts in the White House" opened at the Renwick Gallery.
- May 24 EXHIBITION: "The Thomas Eakins Collection of the Hirshhorn Museum and Sculpture Garden," the first extensive showing of one of the largest Eakins collections in the United States, opened at the Hirshhorn Museum.
- SYMPOSIUM: "Thomas Eakins: A Symposium," a day-long series of lectures by four leading Eakins scholars, presented in the Hirshhorn Museum auditorium.
- May 25 ANNUAL LECTURE: Dr. Robert H. Dyson Jr., President of the Archeological Institute of America spoke on "Twenty Years Digging in Iran," presented by the Smithsonian Institution and the Archeological Institute of America.
- MUSIC INSTITUTE: The Division of Performing Arts opened a nine-day "Institute on Criticism in Jazz."
- May 27 EXHIBITION: "25th National Exhibition of Prints," opened at the National Collection of Fine Arts.

- June ACCREDITATION: The Anacostia Neighborhood Museum offered an accredited course designed for teachers, in conjunction with the Advisory and Learning Exchange.
- June 9 FILM: *Faces of Freedom*, a 30-minute film presenting an overview of American history as told through portraiture, produced by Charles Guggenheim Productions for the National Portrait Gallery with Charlton Heston as narrator, premiered at the National Portrait Gallery.
- June 10 EXHIBITION: "Recent Works in Metal by Albert Paley," including the hand-wrought gates he designed and fabricated for the Renwick Gallery museum shop, and "Iron, Solid Wrought/USA" opened at the Renwick Gallery.
- June 14 SIXTH INTERNATIONAL SYMPOSIUM: "Kin and Communities: The Peopling of America," a four-day program produced by the Smithsonian Office of Seminars and Symposia, opened at the Kennedy Center, with ceremonies that included First Lady Rosalynn Carter, anthropologist Margaret Mead, Senator Hubert H. Humphrey, author Alex Haley, wife of the District of Columbia's mayor Mrs. Walter Washington, and Smithsonian Secretary S. Dillon Ripley. Related film programs and exhibitions were scheduled in the National Museum of History and Technology and the Hirshhorn Museum and Sculpture Garden.
- AWARD: United States Senator Hubert H. Humphrey of Minnesota was awarded the Smithsonian Institution's Joseph Henry Medal at the opening ceremonies of "Kin and Communities" symposium.
- June 16 EXHIBITION: "The Photography of Leland Rice" opened at the Hirshhorn Museum and Sculpture Garden, the museum's first exhibition of contemporary photography.
- VISIT: Her Royal Highness Princess Anne and Captain Mark Phillips of Great Britain toured the National Museum of History and Technology and the Silver Jubilee exhibition, which commemorated the twenty-fifth anniversary of the reign of Great Britain's Queen Elizabeth II.
- June 23 EXHIBITION: "Photographing the Frontier," the first half of a showing of photographs by the pioneers of the American Frontier, opened at the National Museum of History and Technology.
- June 24 EXHIBITION: "22 Polish Textile Artists" opened at the Renwick Gallery.
- June 29 SCULPTURE DEDICATION: On the west lawn of the National Air and Space Museum, Carlos A. Perez, President of Venezuela, dedicated Alejandro Otero's *Delta Solar* sculpture, his country's Bicentennial gift to the United States.

- July SCIENCE: Pleistocene lake site in Colorado, excavated by National Museum of Natural History archeologist Dr. Dennis Stanford, revealed proof that early man was in the New World hunting mammoths, camels, and other ice-age animals earlier than previously known.
- July 4 SPECIAL EVENT: Smithsonian Station of the Washington area's Metro subway system opened on the Mall at 12th Street.
- SPECIAL EVENT: Three days of music, crafts, and dancing held on the terrace and grounds of the National Museum of History and Technology in celebration of the Fourth of July.
- July 8 MILESTONE: National Air and Space Museum welcomed its 10 millionth visitor since its opening July 1, 1976. The record was set one week after NASM's first anniversary.
- July 9 EXHIBITION: "Raices y Visiones—Roots and Visions," a bilingual show, opened at the National Collection of Fine Arts with paintings, prints, and sculpture by artists of the American Hispanic communities.
- July 14 EXHIBITION: "Palaces for the People," an exhibit on a hundred years of resort and motel architecture in America, opened at the Cooper-Hewitt Museum of Design and Decorative Arts, New York City.
- July 20 EXHIBITION: "Summer Sculpture '77," the first outdoor contemporary sculpture show on loan to the Hirshhorn Museum and Sculpture Garden, was opened.
- July 29 EXHIBITION: "Arthur Wesley Dow (1857–1922)" opened at the National Collection of Fine Arts; Dow was an influential art educator around the turn of the century.
- August SCIENCE: Research team, led by National Museum of Natural History archeologist Dr. William Fitzhugh to remote regions of Arctic Northern Labrador, made discoveries about the origins of Indian and Eskimo people and found the northernmost Indian burial structure known in eastern North America.
- August 4 ART COMMISSION: Hirshhorn Museum and Sculpture Garden announced major commission by the Institute of Scrap Iron and Steel, Inc., for the creation of a monumental outdoor sculpture by American artist Mark Di Suvero. Installation on plaza and dedication ceremonies planned for summer, 1978.
- August 5 EXHIBITION: "Grass," a major show of natural grasses and their use as both functional and decorative objects of many cultures, opened at the Renwick Gallery.

- August 7 CONFERENCE: Seventh International Conference on the History of Cartography began in the National Museum of History and Technology, co-sponsored by the Library of Congress. Rare maps, early surveying equipment, and documents from pre-Columbian times to the 19th century were featured in exhibits developed in conjunction with the meeting.
- August 12 SATELLITE: HEAO-1, an X-ray satellite carrying an experiment developed jointly by the Smithsonian Astrophysical Observatory and the Massachusetts Institute of Technology, was the first in a series of three high-energy observatories launched by the National Air and Space Museum to survey and map the X-ray sky. HEAO-1 subsequently identified a bright X-ray nova in the constellation Ophiuchus and a rapid X-ray burster at the galactic center.
- August 20 EXHIBITION: Smithsonian Institution Traveling Exhibition Service exhibition "North American Indian Baskets" began tour at Houston Museum of Natural Science, Texas.
- August 26 EXHIBITION: "We Were But a Handful," the story of the Woman's Party from Seneca Falls to the 19th amendment, opened at the National Portrait Gallery.
- August 27 EXHIBITION: Smithsonian Institution Traveling Exhibition Service's exhibit "And Now a Message . . . A Century of American Advertising 1830-1930" opened in three copies at McMaster University, Ontario, Canada; Saint Louis Public Library; and the Lincoln First National Bank in Rochester, New York.
- September 4 SPECIAL EVENT: The National Air and Space Museum's first annual Smithsonian Frisbee Festival held, with demonstrations and workshops, on the Mall.
- September 9 EXHIBITION: Smithsonian Institution Traveling Exhibition Service exhibit "Folk Arts & Crafts" opened at Center for Southern Folklore in Memphis, Tennessee.
- September 15 MILESTONE: Tenth Anniversary of the Anacostia Neighborhood Museum observed with an Open House.
EXHIBITIONS: "Chinese Album Leaves and Fan Paintings" and "The Four Seasons in Japanese Art" opened at the Freer Gallery of Art.
- September 21 AWARD: CINE Golden Eagle certificate awarded to Smithsonian Institution-produced film, *The Smithsonian Institution with S. Dillon Ripley, Secretary*.
- September 24 EXHIBITION: Smithsonian Institution Traveling Exhibition Service exhibit from Hungary entitled "Hungarian Art

Nouveau" began tour at Ackland Memorial Art Center, Chapel Hill, North Carolina.

September 26 EXHIBITION: Smithsonian Institution Traveling Exhibition Service exhibit "Images of Old Age in America" began its national tour at the Institute of Gerontology, University of Michigan.

September 30 EXHIBITION: "Raphael Soyer: Drawings and Watercolors" opened at the National Collection of Fine Arts; in conjunction with the exhibition, Joshua C. Taylor, Director of the National Collection of Fine Arts, and Soyer held a dialogue about the artist's work.



Two scientists at the Chesapeake Bay Center for Environmental Studies measure soil moisture as part of an investigation of the hydrologic characteristics of individual drainage basins.

SCIENCE

THE BICENTENNIAL CELEBRATIONS brought a greater awareness among the science bureaus of the need to redouble their efforts to serve the public. Attendance at the museums increased this past year over that of 1976 owing in large measure to the extreme popularity of the National Air and Space Museum. A great deal of energy has been expended this past year on visitor surveys in an attempt to determine where we have been successful with the public and to point out areas of weakness. We are delighted with the initial results, which indicate a continued interest among the public in our presentations and an increased knowledge of scientific principles.

With the hectic days of 1976 now behind us, the science units have intensified their research efforts. Among the exciting finds of the past year was confirmation of past theories linking periods of the sun's activity with climate. Studies at the Chesapeake Bay Center for Environmental Studies (CBCES) have yielded preliminary findings which may link the use of herbicides to a decline in the ecologically and economically important sea grasses of Chesapeake Bay. Continued monitoring of experimental solar panels at the Radiation Biology Laboratory may have profound significance on the use of solar energy to heat and cool our homes in the future. Scientists at the National Museum of Natural History have made a significant finding in archeology which will redefine our thinking as to when man first inhabited North America. Studies on amphipods, small crustacea, have assisted in determining tolerance levels to oil pollution. In the tropics, at the Smithsonian Tropical Research Institute, studies of wasp species have enabled us to determine more clearly how these species relate and their role as carriers of disease.

Our educational programs made great strides in fiscal year 1977 by moving away from the more traditional role of letting exhibits tell the whole story. A Naturalist Center, established at the National Museum of Natural History, gave interested amateurs the opportunity to study specimens from the collection rather than just look at them through glass. Resource rooms were established at the Zoo to allow more active participation for visitors and school groups in the Zoo's programs by focusing in depth on certain exhibits. The CBCES continued its program of naturalist tours and is developing innovative curriculum material for all ages of visitors.

The past year did have its challenges and doubts. The ever-present problem of inadequate research support continued to hamper the effectiveness of our efforts. Coupled with this concern was the constant challenge by some of the very nature of our scientific enterprises. All institutions are subject to this challenge from time to time, but our firm conviction is that we should move ahead permitting time to prove our efforts to be in the best interests of our nation.

Chesapeake Bay Center for Environmental Studies

Activities at the Chesapeake Bay Center for Environmental Studies (CBCES) include ecological research and education programs. Principal themes in research include the comparative ecology of terrestrial communities with emphasis on the effects of past land use. Estuarine research is concerned with the response of biological populations to physical and chemical factors. The integration of these two programs is accomplished by an extensive program of monitoring and analysis of runoff from the Rhode River watershed through a system of permanent gauging stations. Education programs include basic research on the design and implementation of outdoor-centered learning experiences, conduct of science-education field trips for school groups, and the development of public programs emphasizing the application of science to environmental issues.

Upland Ecology

The study of the Center's terrestrial communities was expanded with the addition to the staff of Dr. Dennis Whigham, a plant ecologist. He and his colleagues have established a system of permanent quadrats as part of a long-term vegetation inventory which will be used to monitor population changes as well as measuring yearly production rates and long-term fluctuations in the standing stock of nutrients under various land-use conditions. In cooperation with Daniel Higman, Dr. Whigham is also studying how honeysuckle, sassafras, and broomstraw grass interact competitively in early stages of succession. Investigators at the Center have been joined by Dr. Beryl Simpson of the National Museum of Natural History and Mr. Paul Opler of the United States Fish and Wildlife Service in monitoring plant phenology in a recently abandoned field, a young forest, and a mature forest. These investigators are determining patterns of breeding systems, seed dispersal, and seed size within the three study sites. The work is designed to provide a comparison of these systems with desert and tropical ecosystems. Through a grant from the State of Maryland, Drs. Whigham and J. F. Lynch are investigating the configurations of forest patches that are necessary to maintain certain bird and plant communities.

Dr. Lynch and his colleagues are examining the effects of secondary plant succession and land use on various animal communities found in the Rhode River watershed. They are monitoring animal populations on a number of study sites, each of which has been selected to represent a different land use or successional stage ranging from active cornfields and pasture, through recently abandoned old fields, to middle and late successional deciduous forest. Data on abundance and diversity have been gathered for birds, large mammals, small mammals, ants, litter arthropods, and understory arthropods. All of these groups have been studied in detail for at least one year and monitored regularly for more than two years. The study of the latter groups will continue for at least several additional years in order to document long-term fluctuations or directional trends in abundance.

A study of the community ecology of ants at the Center was begun in 1975. The goal is to document the spatial and temporal distribution of the approximately sixty ant species found at the Center and to assess the role of competition for food and nest sites in maintaining observed patterns of distribution and abundance. Ant occurrence has been assessed by means of quantitative sampling of understory vegetation and leaf litter, and by recording ant activity at standardized baiting stations. Ants are sampled on a monthly basis at twelve sites representing a maximal range of land use and successional maturity. The possible effects of interspecific competition for food are studied by documenting behavioral interactions at baits before and after experimental manipulation of species abundances.

The range of land-use types intensely studied at the Center was increased with the addition of pasture and lawn sites. Dr. John Falk is studying the net primary productivity of grass systems under intensive and minimal management conditions. He is also examining the adaptive features of invertebrates on lawn systems subject to frequent mowing.

Watershed Studies

The Center's extensive watershed research and monitoring program was expanded during the year to include two stations in tidal waters which receive the drainage from moderate density residential communities. In addition, several temporary stations were installed in the Patuxent River drainage basin in order to determine the extent to which runoff data from the Rhode River watershed can be applied to other drainage areas of the eastern coastal plain. To supplement this program, a network of twelve rain gauges was installed throughout the Rhode River watershed to permit the accurate characterization of variations in local rainfall and runoff patterns.

Dr. Maria Faust has for the past three years been estimating the concentration of fecal bacteria and pathogens in runoff in relation to land use, season, and other factors. Her data indicates that fecal bacteria levels in runoff fluctuate seasonally and are highest in March, July, and August. Her findings suggest that approximately 2,600 cubic meters of receiving water are required for every hectare of watershed area in order to assure that the

concentrations of fecal bacteria do not exceed water quality standards for shellfish harvesting. Dr. Faust also determined that over two-thirds of total fecal coliform discharge from the Rhode River watershed originated from pastures which represent less than 20 percent of the total land area. Similar findings were made for fecal streptococcus.

Dr. Tung Lin Wu has been analyzing the heavy metal constituents of watershed runoff and rainwater. He estimates that the Rhode River receiving waters annually receive via land runoff approximately 49 tons of iron, 1½ tons of manganese and lesser quantities of zinc, chromium, cadmium, copper, and lead. In general, cultivated land appears to contribute the highest yield of metals in the fall season, while pasture contributes the greatest quantities in the summertime.

The complete findings of the Center's Watershed Program through 1976 were reported at a conference on Watershed Research in Eastern North America sponsored by the Center and funded by the National Science Foundation. Some one hundred and twenty scientists and agency representatives attended the conference to discuss the results of major watershed studies in eastern United States including those on the Walker Branch in Tennessee, Lake Jackson Watershed in Florida, Coweeta and the Chowan River in North Carolina, the Mahantango Creek Watershed in Pennsylvania, and Rhode River in Maryland. Proceedings of the conference have been published.

Estuarine Research

Fish population work was aimed at evaluating the amount of primary production from tidal marshes and mud flats which are utilized to support spawning and larval fish populations. This utilization of primary productivity can then be compared to other major pathways such as microbial breakdown with the marsh or the transport of organic matter into the estuary by tidal currents. Preliminary studies were initiated by Joseph Miklas on the spawning movements of yellow and white perch in headwater streams and marshes. The spawning movements of both of these species were observed to be temperature dependent. Using mark and recapture methods, the population of each spawning stock was estimated and will be related to similar data to be collected in subsequent years.

A team of investigators at the Center, led by Drs. David Correll and Tung Lin Wu, has been investigating various environmental factors which may have influenced the virtual disappearance of sea grasses in the Chesapeake Bay. The dense beds of plants acted to stabilize bottom sediments and as wave filters to protect shorelines on the Bay. Thus, their decline has been speculatively linked to increased rates of shoreline erosion in recent years. Coinciding with this decline has been the increased use of agricultural herbicides in connection with the adoption of "no till" or minimum-till agricultural methods in the Chesapeake drainage. The preliminary findings of Drs. Correll and Wu suggest that concentrations of some herbicides occur in Bay sediments at levels which might be toxic to sea grasses. This reconnaissance work is now being supplemented by bioassay experiments wherein four species of formerly abundant grasses are being tested for their response to herbicide concentrations similar to those found in surface waters and Bay-bottom sediments.

Dr. Maria Faust has been examining the utilization of inorganic carbon and orthophosphate by phytoplankton and bacteria in an estuarine environment. By using radioactive carbon and phosphorus combined with autoradiography, she has been able to distinguish metabolically active and inactive microorganisms. Her findings suggest that only about 28 percent to 42 percent of the total phytoplankton in the estuary were metabolically active and that phytoplankton smaller than 20 microns in size were more active, as compared with larger species, than their total biomass would indicate. This suggests that smaller cells have an advantage in nutrient uptake because of larger surface-to-volume ratio. Depending on the season of the year, between 63 percent and 85 percent of bacteria in the estuary were metabolically active, and in November bacteria associated with the plankton were the most active fraction of the microorganisms. The high metabolic activities of bacteria corresponded with the highest phosphorus uptake rates of phytoplankton at that time. This may indicate a close relationship between the metabolic activities of phytoplankton and those of bacteria in an estuarine environment.

EDUCATION

During fiscal year 1977, CBCES increased its educational emphasis

on research and curriculum development in outdoor-centered environment education while maintaining a high level of activity in the areas of information transfer and public programs.

Research in Environmental Education

The addition of Dr. John Balling, an educational psychologist, to the staff in the fall of 1976, provided the CBCES educational research program added depth and expertise. Several investigations were launched under his direction during this year. A follow-up study on the impact of novel settings on learners corroborated earlier findings that children learn better in surroundings that are familiar to them. Another study was conducted which identified a second major variable in the outdoor learning, the setting. This investigation varied the relevance of the learning setting to the subject matter being taught. The findings support the long-held belief of outdoor educators that certain subjects may be positively enhanced by being taught in a reinforcing setting. This work is expected to lead to the development of new approaches to the Center's public education programs.

Investigations were begun in human ecology, focusing on the effects of environmental change on human behavior and attitudes. One study conducted by Drs. Balling and Falk measured, over a wide range of age groups, preference toward natural settings. Five natural biomes were evaluated including tropical rain forest, temperate deciduous forest, coniferous forest, savanna, and desert. Overall, the savanna was rated highest for both a residential setting and as a place to visit.

Public Education Programs

Initiated in 1975, the teacher-led tour program is designed to provide children with outdoor experiences which reinforce or introduce science concepts. The Center worked closely with the local Anne Arundel County School System to develop the following teacher-led activities: "Micro-Trails, Macro-Trails" for the first grade; "Animal Adaptations: Insects and Spiders" for the second and third grades; "Community Comparison: Forest and Old Field" and "Estuary Chesapeake" for the fifth and sixth grades; and "Seeing the Trees for the Forest: A Census Activity" for the seventh and eighth grades. Each activity is outlined in a brochure that

includes background information for the teacher, objectives for the students, a step-by-step procedure section for the class and suggested follow-up activities.

Another model concept in outdoor environmental education is the Center's Summer Ecology Program. The program emphasizes community-centered learning. The program, conducted in seven different locations instead of the Center's research facility, helps familiarize children with the human and natural ecology of their own communities. Four college students and four high school students, selected as part of the Smithsonian's Intern Program, implemented and evaluated education activities of their own design. At the end of the summer, the students conducted a workshop on the outdoor education activities developed for the Program. Environmental educators, science teachers, and other interested individuals participated in this one-day workshop.

Work/Learn Program

The Work/Learn Program in Environmental Studies, initiated in the fall of 1975, is a cooperative education program that provides college students with the opportunity to live and work in a research setting. Each participant receives a small stipend, plus living accommodations, and may arrange to receive academic credit for work completed at the Center.

Seventeen students were selected to participate in the program during the first year. They worked with CBCES professional staff on projects in estuarine and terrestrial ecology, land-use management, and environmental education.

Information Transfer

A major objective of the information transfer program is to disseminate the Center's scientific research findings to public groups that can use this information in making land-use and water-quality decisions. During 1976-1977, the CBCES staff conducted several projects specifically aimed at disseminating the Center's watershed and estuarine research findings.

Since 1974, scientists at the Center have been monitoring surface runoff from the Rhode River watershed for nutrients, bacteria, and sediment. This research was expanded to include monitoring of heavy metals in 1975 and herbicides in 1976. Major objec-

tives of the study are to determine the magnitude and kind of non-point source pollution resulting from rural land-use practices and the impact of this pollution on the Rhode River estuary. The results of this research program have applicability to similar regions of the country.

Using technical reports from this work, Marjorie Beane summarized and interpreted three years of CBCES research findings in a publication entitled *Assessing Non-Point Source Pollution: A Detailed Study of a Rural Watershed in the Coastal Plain of Maryland*. This report also included a description of state and national water-quality planning programs and made recommendations for management practices to reduce non-point source pollution. It was widely distributed to water-quality planners, resource managers, public officials, and interested citizens throughout the eastern United States. Government agencies, citizen organizations, and other groups concerned with water quality have found the report especially useful because it summarizes a large amount of scientific data in a brief, concise, and understandable form.

The Center also provided support in the form of staff time and expertise to citizen organizations throughout the Chesapeake Bay region. Support activities for these groups included organizing workshops and conferences, developing technical information on environmental issues, and helping achieve citizen participation in land and water-quality planning.

CBCES staff helped plan and organize a major conference on the Chesapeake Bay which was held in April 1977. The purpose of this conference was to assess the present and future status of the Bay over the next ten years.

During the summer of 1977, the Center's information specialist *Transfer: A Model Approach to the Chesapeake Region*, describing completed a project report entitled *Environmental Information* the Center's efforts to develop a model program for disseminating environmental information from a research institution to the surrounding community.

Over the past five years, CBCES staff conducted studies to determine major sources of environmental information for citizen organizations, legislators, and resource managers in the Chesapeake Bay region; identified top priority issues among these groups; and investigated the extent of communication between these public

groups and the scientific community. The staff have also investigated existing information transfer programs and the involvement of citizens in the environmental decision-making process. On the basis of these studies, the Center developed different methods for disseminating scientific information to resource managers, public officials, and citizens. The Center's investigations, special projects, and recommendations for a model information transfer program are summarized in the project report. This five-year research program was funded by the Edward John Noble Foundation.

Facilities

Work was begun at the end of the year on the addition of a new laboratory wing to the existing Old Dominion Building. This facility will provide laboratory space and services for chemical and microbiological experiments. Several other projects were undertaken during the year to upgrade and renovate existing structures.

Fort Pierce Bureau

This past year the Smithsonian's Fort Pierce Bureau stressed its program of research on life histories, reproduction, development, estuarine lagoon near the Atlantic Ocean, within easy access of the and larval biology of marine organisms of the Indian River Lagoon and offshore continental shelf. The locality of Fort Pierce, on a Gulf Stream with its long-distance larvae, and in a zoogeographic transitional zone where both tropical and temperate organisms are available for study, offers a variety of habitats and important advantages for studies of life histories and reproduction.

In studies on reproduction, information is being accumulated on reproductive cycles, breeding seasons and spawning of local animals, and such basic biological phenomena as the formation and maturation of sex cells and fertilization of eggs. Studies of development are furnishing information on comparative developmental patterns of local species which are useful in interpretations of phylogenetic relationships, systematics, evolutionary history, and in the furtherance of understanding of the local ecosystems and adaptability of species to environmental stresses. Work on larval biol-



This scanning electron photomicrograph taken at the Fort Pierce Bureau shows the first larval stage of *Menippe Nodifrons*, the Cuban Stone Crab (75X), revealing a wealth of detail not easily visible under ordinary light microscopy.

ogy is concentrating on problems of larval systematics, differentiation of embryonic and larval tissues and organs, structural transformations, settlement, and factors regulating these processes. Research during the past year emphasized work on sipunculan worms, ascidians, bryozoans, marine gastrotrichs, and crustaceans.

Other activities included systematic and ecological research on specific groups of marine invertebrates such as decapod crustaceans and benthic foraminiferans. Representative specimens of importance to the National Collections were sent to the National Museum of Natural History. Programs for postdoctoral fellows and visiting scientists in life histories studies were implemented. The electron microscope facility, established over a year ago in collaboration with the Harbor Branch Foundation, Inc., for the Life Histories Program, was expanded to include a scanning electron microscope as well as the transmission microscope.

Continuing studies on life histories of marine worms of the phylum Sipuncula concentrated on reproductive biology of local species with the objectives of accumulating information on reproductive cycles, breeding seasons, and spawning; and on morphology, metamorphosis, and systematics of planktonic oceanic larvae.

In studies of oceanic larvae, scanning electron microscopy was utilized in morphological characterizations of larvae and in an examination of metamorphic transformations. For studies of internal anatomy, a technique was devised for viewing serial sections of larvae by scanning electron microscopy. In combination with transmission electron microscopy, the scanning microscope was used in an investigation of adhesive, sensory, and cuticular structures of oceanic larvae. Observations on behavioral changes during settlement and metamorphosis of oceanic larvae revealed that an unidentified factor produced by adults will, when combined with the appropriate substratum, induce metamorphosis of larvae. This discovery was utilized to induce synchronous metamorphosis in large numbers of larvae for rearing and identification purposes and for studies of morphological changes during metamorphosis and early juvenile development.

The Crustacean Biology Section continued previously established investigations on the ecology, larval development, and systematics of decapod and stomatopod crustaceans from the fresh, lagoonal estuarine and marine waters of the Indian River area.

Numerically large and species-rich assemblages of decapod crustaceans form a major component of lagoonal sea-grass beds, and continental shelf-edge oculinid coral reefs. Over 30 species and 44,000 crustacean specimens indicated that the lagoonal drift algae, with its associated shrimps and crabs, comprises a community as important, if not more so, as the crustacean communities traditionally associated with just the sea-grass beds in the Indian River.

Quantitative station samples collected by the submersible *Johnson-Sea-Link* from oculinid shelf-edge reefs suggested that at least ten common decapod species live within the branches or are associated with the coral bases and are predominant members of this community.

In life histories studies, the complete larval development of four species of crabs and two species of shrimp was obtained in the laboratory.

Systematic investigations on the baseline inventory collections of decapod and stomatopod crustaceans continued to yield both major and minor range extensions for about twenty members of the tropical decapod crustacean fauna. The Indian River Coastal Zone Reference Museum now contains approximately 12,000 lots and well over 20,000 identified specimens comprising about 1,200 species. Data for these continue to be routinely added to the Sel-Gem computerized files for use by other investigative agencies.

Studies on foraminifera of the area take several approaches including a general survey of the population in the Indian River and an examination of their role in the ecology of the estuary. Preliminary studies of offshore foraminifera are in progress.

National Air and Space Museum

In the year following the completion of the new National Air and Space Museum (NASM), over 9.5 million people visited the treasures of America's aviation and spaceflight heritage, making the newest Smithsonian addition to the Mall the most popular museum in the country. By the end of September, the total visitor count was approximately 13 million.

The fifteen months since the Museum opened have been productive and exciting. The staff focus has shifted from readying the new building to implementing research projects and public service programs, studying public response to the inaugural exhibitions, adding artifacts to the galleries, and modifying some displays. During this period, the Silver Hill facility in suburban Maryland was developed and opened to the public.

A striking addition to the Museum grounds is the *Delta Solar* sculpture on the west lawn. Created by Venezuelan sculptor Alejandro Otero, *Delta Solar* reflects sparkling light off stainless steel "sails" that turn in the breeze. The sails are mounted in an open geometric grid within the 27- by 40-foot delta-shaped piece. In a ceremony by the sculpture's reflecting pool, the President of Venezuela, Carlos A. Perez, dedicated his country's Bicentennial gift to the United States on June 29, 1977.

Inside the building, there have also been a number of new installations: Pioneer 10 and Ranger spacecraft were suspended in the Milestones of Flight and East End galleries, respectively; two new aircraft, a Douglas M-2 and a Beechcraft D-18S, were added to the Hall of Air Transportation; and the North American F-86 displayed in the West End bay was replaced by a Grumman F8F-2.

The NASM Art Department arranged a special exhibition of Robert Rauschenberg's "Stoned Moon" series of lithographs. The twenty-one pieces which represent Rauschenberg's reaction to the first lunar landing were displayed in the Space Hall during November and December, 1976.

Two new exhibits were placed in the Special Exhibits area on the second floor. The Museum observed the fiftieth anniversary of Charles Lindbergh's historic transatlantic flight with the installation of a commemorative exhibit which is located between the *Spirit of St. Louis* and Charles and Anne Morrow Lindbergh's Lockheed Sirius. Photographs, film footage of the flight, and the aviator's welcomes in Paris and on his return to the United States anchor the display. Included in this exhibit are the check Lindbergh received for the flight, the barograph for the *Spirit of St. Louis*, and memorabilia from the young hero's goodwill flights through Latin America later in 1927.

Amelia Earhart's Lockheed Vega, in which she became the first



The National Air and Space Museum, which opened to the public on July 1, 1976, was visited by 9.5 million people in its first year of operation. In the foreground is Venezuela's Bicentennial gift to the United States, the sculpture *Delta Solar* by Alejandro Otero, which was dedicated on June 29, 1977. Below: Director of the National Air and Space Museum and former astronaut Michael Collins in front of the *Spirit of St. Louis*, which hangs in the Museum's Milestones of Flight Gallery.



woman to complete a solo transatlantic flight, was also installed in Special Exhibits in May. The exhibit includes the radio receiver she used during the flight, one of her flight jackets, and memorabilia associated with her flight-related activities.

Research was completed and construction begun on a new gallery, "Exploring the Planets," which will occupy the area formerly held by Air Traffic Control. Scheduled to open in the summer of 1978, "Exploring the Planets" will acquaint visitors with the growth of interest in the planets and moons of the solar system from the time of their discovery to present-day planetary exploration programs. The exhibit script, prepared by NASM's Center for Earth and Planetary Studies staff, highlights current knowledge of the planets, the tools of exploration, and individual space missions. A unique feature of the exhibit plan is the emphasis on comparative planetology, accompanied by a discussion of cratering, volcanism, and other planetary processes.

Staff planning and research continues for modifications in the General Aviation Gallery, completion of which is scheduled for the spring of 1978. "Flight for Everyone" will be the dominant theme and many of the units will be on how to fly.

To ensure improvement and excellence in the exhibits, the NASM began an evaluation of its effectiveness as a publicly oriented communications medium. During fiscal year 1977, the NASM developed two programs of exhibits evaluation. The first was based on modern techniques of opinion research, while the second was an ad hoc study based on qualitative and quantitative observations of visitor behavior.

Evaluation of about one-third of the new galleries was contracted to a private firm, which developed the interview structure, conducted the interviews, and reduced and correlated all data. The demographic parameters of the visitors to NASM were quantified and tabulated. Results showed that the Museum is especially popular with young people; more than one in four visitors are between the ages of sixteen and twenty-five, while a majority of all visitors are over sixteen. Over one-half of the visitors surveyed were college graduates, while four out of ten were employed in professional and executive positions.

The Museum was found to be one of the biggest tourist attractions in the nation's capital, with a high number of repeat visitors

—about one in three. The following quote from the preliminary survey report conveys visitors' attitude: "Word about the nature of the museum has clearly gotten around—for the mood and level of expectation of the visitors was quite different from what we have found at other institutions. The primary motive was entertainment and pleasure—but with a feeling that they would end up with a twofold benefit—a good time and educational gains as well."

Behind the scenes of the exhibition areas, the staff pursues historical and scientific research projects. Curatorial research efforts at the NASM are for exhibits, publications, aircraft restoration, and response to public inquiries. Scientific research is conducted by the Center for Earth and Planetary Studies.

In addition to the Hall of Air Transportation and General Aviation revisions, three future aeronautics exhibits were planned and most of the script completed. These include an exhibit called "Flying for Fun" which will replace the aircraft in the West Gallery, and small exhibits on Grover Loening and James H. Doolittle in the Special Exhibits Gallery. All are scheduled to open during the next fiscal year.

The Department of Aeronautics staff is preparing books and monographs on the following subjects: the effect of McCook Field on American aviation; United States Women Fliers, 1910–1918; United States Women Fliers, 1919–1928; the P-51C Mustang *Excalibur*; and the Aeronca C-2. In addition, more than 1,500 aviation-oriented organizations have been asked to provide lists of their aviation holdings in order to compile an aeronautical history source guide. It is expected that this project will take two years to complete.

The Department of Science and Technology continued its program of research on aerospace history, the impact of flight upon society, and technology transfer.

Projects completed include studies of the airplane as a subject in technical art, surveys of postwar high-speed research aircraft, and the origins of the swept-wing and delta-wing planeforms.

A monthly works-in-progress seminar was established to encourage interdepartmental discussion on research currently underway by the NASM staff and others. Topics included: Guggenheim Support of American Aviation 1926–1930, Engineers and the Airplane 1875–1905, Using Aerospace Technology on Earth, U.S. Women in Aviation through WWI, Diplomatic History and the Berlin Airlift,

the Life of Robert H. Goddard, and History of Black Fighter Pilots in WWII.

The Department of Astronautics staff is preparing books and papers on the following: Prelude to the Space Age: Rocket Societies 1924–1940; International Astronautical Movement 1920–1940; Earliest Flight; and Lilienthal and the Americans, which will be the foreword to a book being published by the Massachusetts Institute of Technology. In addition, “To Ride the Fractious Horse,” a book-length manuscript by curator Thomas D. Crouch about the rise of the American aeronautical community between 1895 and 1905 is being reviewed for publication.

The Smithsonian Institution, through the NASM, was awarded a grant from the Bureau of Education for the Handicapped, Department of Health, Education and Welfare, to develop a set of guidelines to assist museum educators in establishing educational programs for handicapped students. These guidelines are being incorporated in a publication that also contains a survey of available literature, information related to federal legislation, and the results of surveys sent to special education teachers, museum educators, and consumers. Publication of the book is expected in the next fiscal year.

Staff research revolving around aircraft restoration is another intriguing aspect of the curatorial program. Before restoration can begin, a package containing detailed information required by the restoration crew must be assembled. The principal steps in the whole process are identified, and the detailed painting and markings of the original aircraft are delineated, if known. A continuing problem is the location of replacement parts for aircraft long out of production. A great deal of effort is being expended to meet the Museum’s goal of complete accuracy. During 1977, restoration packages were prepared by the Aeronautics staff for the following aircraft: Messerschmitt Me 262, Arado AR 196, Grumman F6F Hellcat, Navy N3N Trainer, Cessna O-1A Bird Dog, Lockheed P-38 Lightning and XP-80 Shooting Star, North American P-51C Mustang, Langley Aerodrome, and Curtiss P-40N. Substantial progress has been made on two planes in particular: The Aeronca C-2 and the P-51 Mustang.

The Aeronca was modified after it was built, requiring restoration specialists to do a great deal of painstaking work to restore it to its original condition. The configuration of the vertical fin had to

be totally changed. The restoration of the P-51 Mustang *Excalibur* was assisted by the pilot of the plane who remembered the plane as being a brighter red than it appeared years later and a sample analysis determined that the original paint was indeed a brighter shade of red.

Staff at the Center for Earth and Planetary Studies continued a rich scientific research program. A manuscript on "Astronaut Observations from the Apollo-Soyuz Mission," by Farouk El-Baz, the Center's Director, details the planning for and execution of the Earth Observations and Photography Experiment. It also includes an account of how the astronauts were trained to collect the data in support of on-going research in the fields of geology, oceanography, hydrology, meteorology, and environmental science. The manuscript was submitted for publication to the Smithsonian Institution Press as the first volume in a new series: *Smithsonian Studies in Air and Space*.

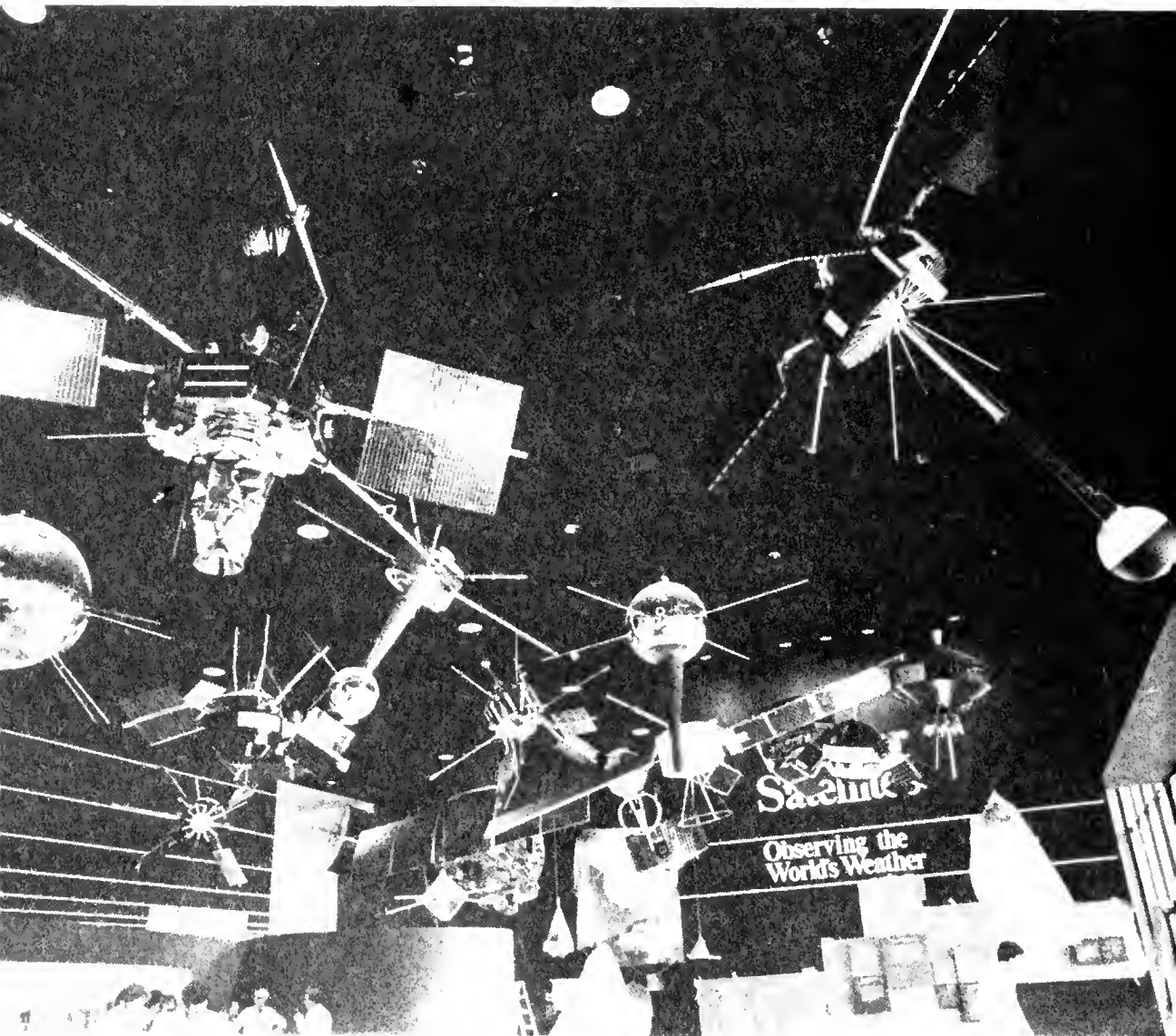
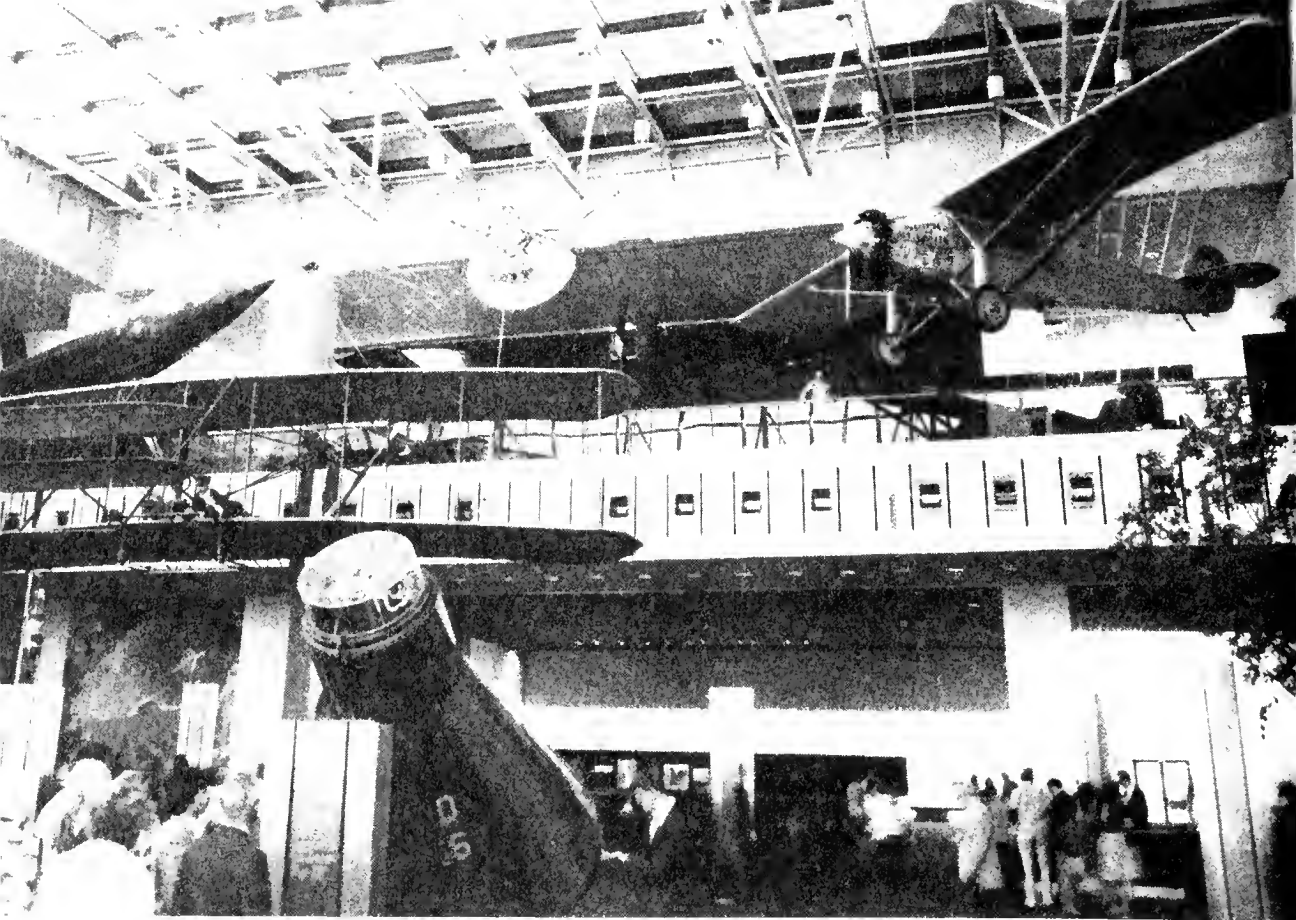
The Center continued to coordinate the analysis and synthesis of the Apollo-Soyuz photographic results by several research groups. The data-analysis program included photointerpretation and the preparation of geologic and oceanic maps.

Lunar scientific research continued at the Center. Results of photogeologic investigations of the crater Haldane in Mare Smythii were published in the *Proceedings of the Seventh Lunar Science Conference*. Additional research was performed using the resulting stratigraphic base and correlations with orbital X-ray data of the Smythii basin. Of particular importance were studies of the stratigraphic relations and origin of the terra, mare, and darker materials.

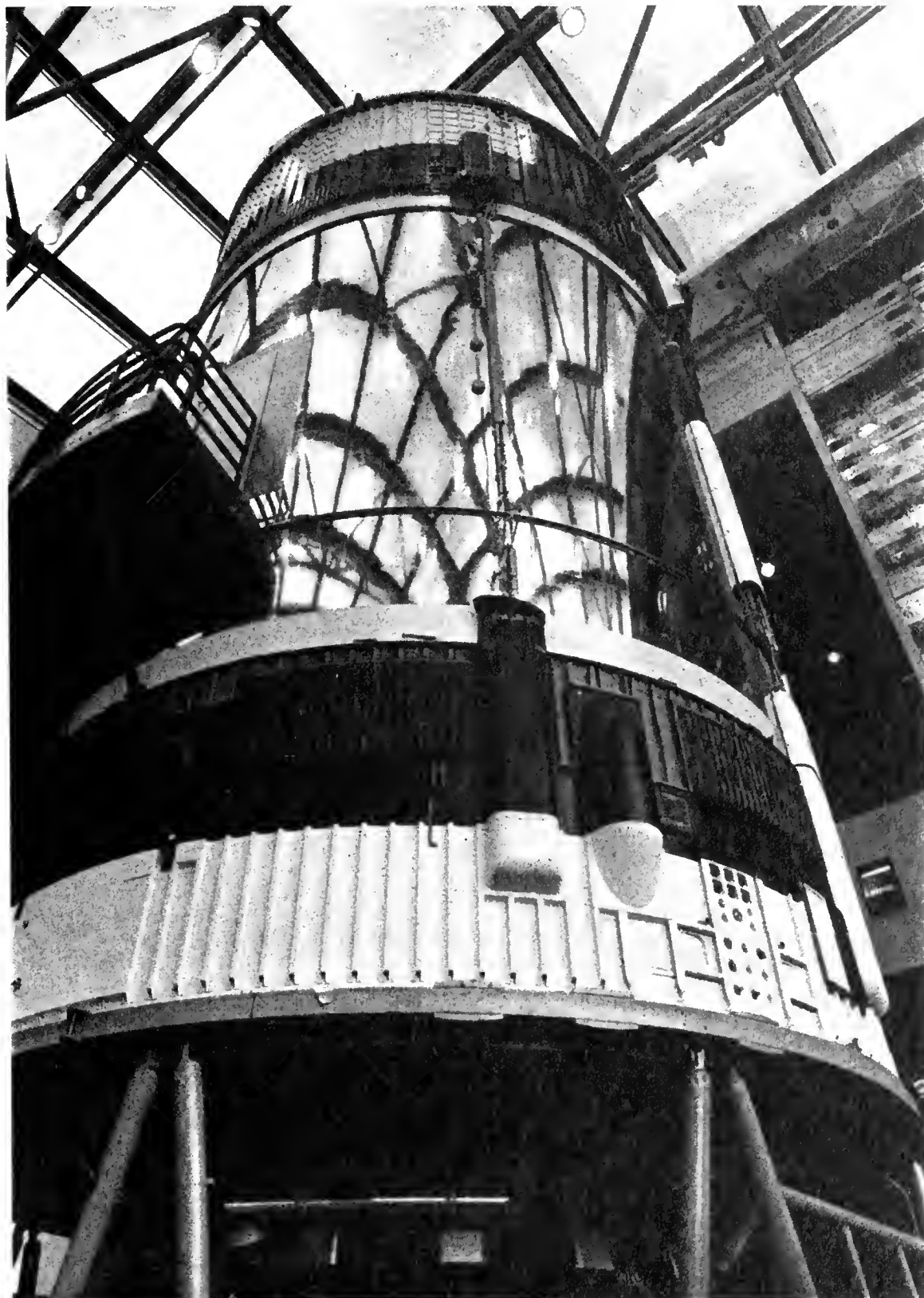
Photogeologic studies of lunar calderas, sinuous rilles, and mare domes were completed during the past year. A scheme for the geologic evolution of a possible lunar caldera in Mare Smythii was presented. This scheme is of major importance to studies of many morphologically similar lunar surface features.

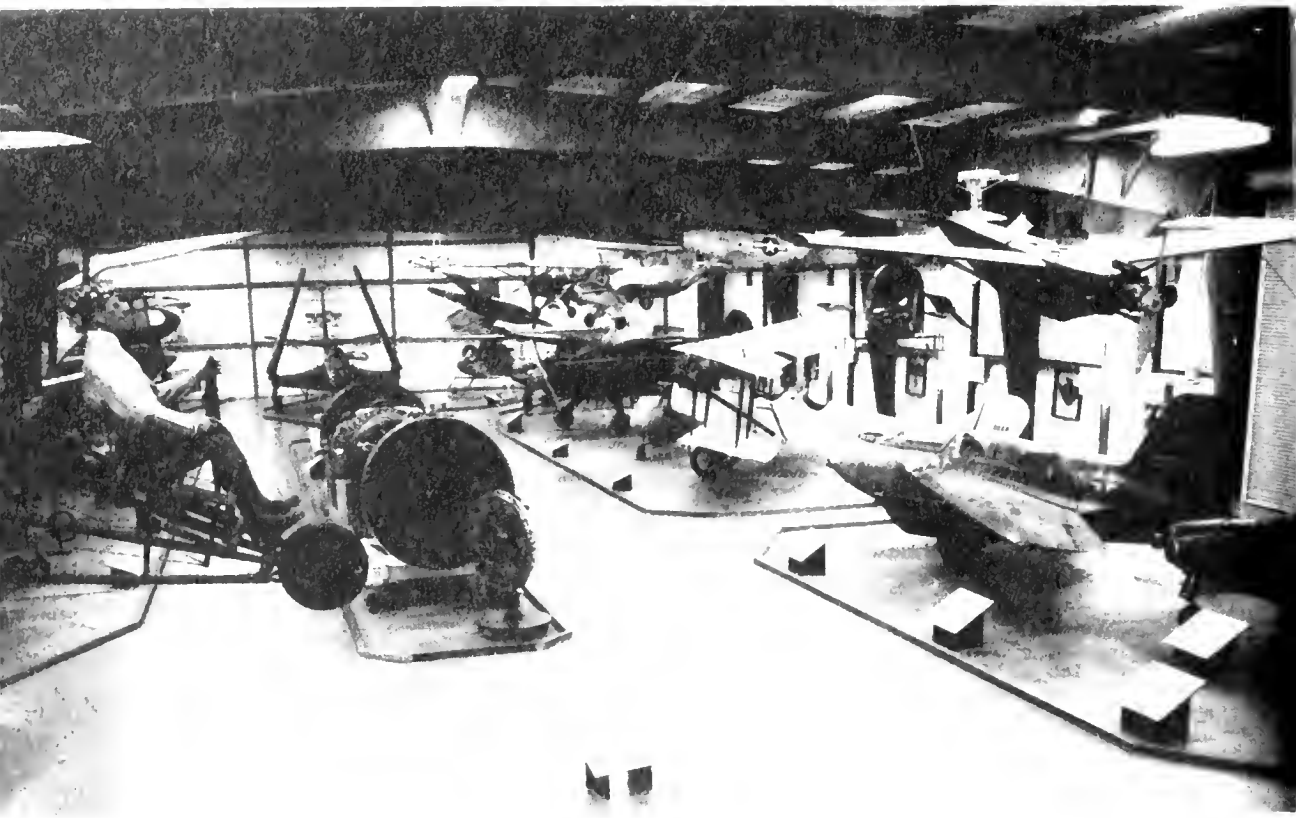
Two studies of lunar volcanic domes were completed at the Center during the fiscal year. Dome distribution was studied using six morphological classes. In another study, completed at the Center in cooperation with Brown University, the morphometric properties of mare domes were measured for comparison with terrestrial domes.

Center personnel continued to cooperate with the National Aeronautics and Space Administration in the lunar mapping program. A geologic map of the east side of the Moon was published in co-



Facing page, upper: Featured in the National Air and Space Museum's Milestones of Flight Gallery are the *Spirit of St. Louis*, the Pioneer 10 spacecraft, the Wright Brothers' Flyer, the North American X-15, and John Glenn's *Friendship 7*. Lower, Satellites of all shapes and sizes, including Tiros, Transit, Solrad, Lofti, and representatives of the Explorer, Pioneer, and Vanguard, hang overhead in the Satellite Gallery. Below, Visitors may walk into Skylab and see where astronauts worked and lived for as long as three months.





Above, The Silver Hill Museum is an active preservation and restoration facility, and the items seen here may change from month to month. The aircraft at the left is a 1912 Curtiss Pusher. *Below*, Pat Williams concentrates while restoring the engine of the *Excalibur III* at the National Air and Space Museum's Silver Hill facility.



operation with the United States Geological Survey. In addition, a paper on the evolution of the Moon from the stratigraphic point of view has been submitted for publication. This paper includes a synthesis of Apollo-gathered data on the nature of the lunar crust.

In cooperation with the International Astronomical Union and the United States Board of Geographic Names, the computer file of lunar nomenclature was completed. Lists of named features on the Moon were prepared for incorporation in a book on planetary topography to be published by the NASA.

A project entitled "Desert Erosion and Sand Movement in Egypt" was begun for joint research between Center personnel and the Geology Department of Ain Shams University, Cairo. The Center's Director joined Dr. David Challinor, Assistant Secretary for Science, in discussing this and other Smithsonian projects in Egypt with President Anwar el-Sadat during his visit to the United States in April 1977.

The NASM Library remains a valuable resource for historical documents on both famous and little-known aerospace personalities, aircraft and engine photographs and drawings, space projects and vehicles, early ballooning and rocketry, aerospace industry histories, and other miscellaneous topics relating to aerospace. All of this information is housed in the research files of the Museum which the Library began to microfilm during the reporting period. The cataloging of over 1,500 pieces of aeronautical sheet music from the Bella C. Landauer collection was completed.

In keeping with Director Michael Collins's stated goal of establishing the NASM as an international center for the study of the history of flight, the Charles A. Lindbergh Chair of Aerospace History was established and announced in 1977. Charles Harvard Gibbs-Smith, aerospace historian and Keeper Emeritus of the Victoria and Albert Museum in London, will be the first occupant of the endowed chair, which has been offered for one year, beginning January 1, 1978.

The Museum also developed an Artist-in-Residence program in 1977. In consultation with the National Endowment for the Arts, the Curator of Art developed a list of potential candidates. After review by the directors of the NASM, the National Collection of Fine Arts, and the Hirshhorn Museum, California sculptor Frederick Eversley was invited to be the first Artist-in-Residence at the NASM.

Progress was made during 1977 on the next two presentations to be shown in the Albert Einstein Spacearium and the Air and Space Theater. The Presentations and Education Division staff began production of a new Spacearium show, entitled *Worlds of Tomorrow*, which will replace *Cosmic Awakening* and is expected to premiere in 1978.

A sponsor was obtained for NASM's second IMAX presentation which will replace *To Fly* in the Theater. *The Living Earth* an overview of our small, fragile planet, will be sponsored by S.C. Johnson and Son, Inc., with Francis Thompson, Inc., producing the film, and the NASM retaining certain exhibition rights. The film is expected to be completed by the end of December 1978.

In fiscal year 1977, the NASM sponsored a variety of free, public programs highlighted by the Museum's Lindbergh Symposium, held to commemorate the fiftieth anniversary of Charles A. Lindbergh's historic flight. Five noted Lindbergh scholars spoke on Lindbergh's life and accomplishments to a large crowd gathered in the Museum's Theater.

Two series, Exploring Space with Astronomers and Monthly Sky Lectures, were held under the starry dome of the Museum's Albert Einstein Spacearium. Speakers included Dr. Frank D. Drake, Director of the National Astronomy and Ionosphere Center and Professor of Astronomy at Cornell University; Dr. J. McKim Malville, Professor of Astro-Geophysics at the University of Colorado; and Dr. Joseph Veverka, a Mars expert who served as a member of the Mariner 9 television team. Two nights of poetry readings by Col. Alfred M. Worden, former Apollo 15 astronaut and poet, were held in the Spacearium. One noontime series, Air and Space Forums, and an evening series, New Windows on the Universe, were conducted in the Museum's Theater.

Like many of the other Smithsonian museums, the NASM marked the inauguration of President Jimmy Carter with summer hours and free concerts. The Museum also provided a day of fun to thousands by sponsoring the first annual Smithsonian Frisbee Festival during which a Frisbee of note was accessioned into the Museum's collection.

Several test flights of the Space Shuttle Orbiter were carried live on television monitors at the NASM. Hundreds watched the broadcasts at the Museum which was the only facility in Washington to provide public viewing of the test flights.

The Silver Hill facility is a revamped preservation, storage, and restoration center located about eight miles from the Mall Museum. Two hangar-like buildings display air and space craft, engines, propellers, models, and other items, enabling enthusiasts to view much more of the collection than space permits at the NASM. Labels provide information about the items on display. Guided tours are free and include a glimpse of the restoration shop where wood, fabric, metal, and other specialists work on the aircraft.

The objects available for viewing at Silver Hill change as artifacts are moved for restoration work, exhibition in the Mall Museum, or loaned to other institutions. The fifty-five display aircraft at the new Silver Hill facility have included the Hawker Hurricane IIC, a famous World War II British fighter; the Messerschmitt 163B, the first operational rocket-powered aircraft; a Bell Model 30, the first successful two-bladed helicopter; and several significant general aviation aircraft. Also on display are some of the Chinese kites that started the Smithsonian's aeronautics collection in 1876 when they were donated after the Centennial exhibition.

About thirty aeronautics artifacts are displayed including the Able-Baker missile nose cone from the Jupiter vehicle which carried two monkeys aloft in 1960; a model of Surveyor, the spacecraft that soft-landed on the moon in preparation for Apollo flights; and the entrance hatch from John Glenn's *Friendship 7* Mercury spacecraft.

National Museum of Man, Center for the Study of Man

In October 1976 the administration of the Center for the Study of Man was turned over to Dr. Porter M. Kier, who is also the Director of the National Museum of Natural History and the National Museum of Man. Under this new direction, concerted efforts were made during 1977 to accelerate the preparation and production of the *Handbook of North American Indians*. *The Handbook* is a comprehensive encyclopedia that, when completed, will comprise twenty volumes and well over one thousand scholarly articles. It is written from the perspectives of anthropology, history, and linguistics.

Most volumes will be studies of tribal culture and history by area, such as the Northeast, the Southwest, and the Plains. Several other are thematically organized, such as language, technology, and the visual arts, and the history of Indian-White relations. The editing on two volumes, *Northeast* and *California*, was completed in 1977, and both were sent into mechanical production. Plans are to complete the first of two Southwest volumes and the Subarctic volume in 1978. The organization of the efforts of hundreds of scholars who are contributors to the *Handbook*, and the work of editing, researching, and preparing the *Handbook*, is the responsibility of General Editor William C. Sturtevant, Curator of North American Ethnology in the National Museum of Natural History, and a staff of thirteen.

Coordination of production of the *Handbook* is a major administrative undertaking in that the work of over 1,000 author-contributors must be solicited, kept track of, and paid for. In many subject areas there is only one person or at most a few people in the world who can prepare the articles needed, and it is frequently necessary to adjust to their tight and changing schedules.

The extremely high quality which will be the hallmark of the *Handbook* when it is completed derives principally from the scholarship of the authors who are contributing the *Handbook's* articles. In large measure, however, the quality will also be traceable to the care which is lavished upon the editing and preparation of support materials such as illustrations and indexing. Great pains are being taken by the *Handbook* staff to assure that the very best and most appropriate illustrations are found or created to supplement an author's text, that Indian words and place names are checked thoroughly, that an exhaustive index is prepared to the concepts and terms in the volumes, and that an extensive cross-indexed bibliography is prepared for each article as well as for each volume. All of the effort, on the part of authors and staff, is meant to insure that the *Handbook* will be an accurate, reliable reference work for many years to come.

Research on American Indian problems, and liaison with the Indian community, has continued during 1977 under the direction of Dr. Sam Stanley. Dr. Stanley administers the Urgent Anthropology Program, which, by means of small grants, supports the timely study of projects dealing with the American Indians.

The National Anthropological Film Center (NAFC) came to the Smithsonian Institution in 1976 under the direction of Dr. E. Richard Sorenson "as a means to forge beyond the too narrow view of the human condition as biological organization or collections of artifacts." It is now using the scholarly potential of film to explore and reveal the range of human qualities and behavior of our diverse and changing world. Bridging science and humanities, it draws from the materials and methods of both.

Many distinguished scholars and citizens have supported the Center and its work. One of these was Dr. Margaret Mead who said on behalf of the Center's efforts:

Future scholars might well consider the loss of knowledge of the vanishing, as yet unexamined independent experiments in living one of the tragic losses of our time. Some of these ways of life reflect conditions important in our behavioral and cultural evolution; some reveal special expressions of human organization potential; many tell us about the nature of the human condition elsewhere in our growing 'one world'.

New research opportunities in third-world nations for scholarship have been identified by Dr. Sorenson in the past year.

Micronesia. Last summer Dr. Sorenson visited Micronesia. Traditional culture which had been so widespread and active during his last fieldwork in 1965 had virtually faded away. Only three, out-of-the-way islands still supported a way of life which could be said to be traditional. One of the team members was from these islands and had been in training for a year at the Center. As the son of a late paramount Chief of Ulithi, he was able to provide rapid entree and acceptance for the work. As filmer he documented in a way which Western eyes would not permit. As a team member he greatly facilitated the completion of this first phase of the study.

Brazil. From Micronesia Dr. Sorenson went to one of the last great refuges of isolated, independently evolved ways of life in the world—Brazil. A great worry had been that in recent years most of the isolated Indian regions have been increasingly barred to foreigners. At the same time, the Trans-Amazonia Highway, and its

feeder roads, have opened vast regions of this once isolated area to rapid change.

A summer earlier, he had been invited by Dr. William Crocker to begin a film study of the Canela Indian tribe which the latter has been studying for eighteen years. Permission was received to film these not-so-isolated Indians. The President of the National Indian Foundation of Brazil became interested in the Center's techniques and efforts. Dr. Sorenson was invited to begin similar film studies in Brazil in the most isolated and sensitive Indian regions.

Among the Canela, it was discovered, there is a culturally patterned childhood which permitted a society to develop in which unusually free expressions of human individuality strengthened group solidarity. Indeed, the social solidarity of the Canela people is one of the remarkable features of their kind of life, a fact already remarked on by Dr. Crocker. A quite different condition prevails in Western societies, where individuality and solidarity are different kinds of things which oppose one another. Thus, the implications of the study not only touch on previously unknown possibilities in psychosocial patterning, but also on the very nature of inquiry itself.

Cook Islands. Premier Albert Henry of the Cook Islands also has taken a personal interest in NAFC efforts, feeling that they were useful in helping him define a cultural identity for the Cook Islands people. He has invited NAFC to start studies on any of the dispersed islands and atolls in a nation which contains elements of all three of the major Polynesian groups.

Papua New Guinea. The NAFC received an unprecedented invitation to work directly with the new Institute of Papua New Guinea Studies throughout the country in locations the Center may select. This is unusual in that the Institute ordinarily limits itself to determining research policy for the nation and advising the University on who it may allow into the country for research and what kinds of research will be permitted. That the Institute wants to work directly with NAFC is very promising.

Nepal. Dr. Sorenson's visit to Nepal this year brought an unusual and unprecedented invitation to work directly with the Royal Nepal Academy to study and film traditional ways of life and culture across the entire country.

It is a unique region to which the NAFC may now go with its

cameras and scholars. Two of the earth's major different kinds of people touch and mix in Nepal: the Indo-Europeans of the south and the Central Asiatics of Tibet and Mongolia. The contact between East and West here was ancient and persistent. As a result, many unique, fascinating approaches to life have been spawned. Several of these still remain in the isolated regions of Nepal.

Pakistan. The Minister of Education has opened up the Hunza region, a part of Pakistan which was closed to all foreigners and where even our own embassy had not been able to get an observer. In this isolated and extraordinary region, deep in the central Karakoram Mountains, there was an independently evolved, isolated, civilized development among people who are not related linguistically or behaviorally to the others in this part of the world. Social harmony was high, health unusually good; many individuals lived to over one hundred years of age. The NAFC had full cooperation and assistance from all levels and was able not just to survey the Hunza Valley, but north even to the Sinkiang border, through other tribes and peoples. Now being built through Hunza, and on to China, is the new Karakoram Highway—a major effort to link China and Pakistan with an all-weather modern highway. This will be opened to some traffic in about a year. Then, the isolation and independent life-style of the people there will be quickly altered.

All these opportunities are remarkable. They are in those very countries which contain the greatest reserves of independently evolved and tribal cultures in the world. Some of these ways of life reflect conditions important in our behavioral and cultural evolution; some reveal special expressions of human organizational capability; many tell us about the nature of human forces elsewhere in our growing "one world."

RESEARCH INSTITUTE ON IMMIGRATION AND ETHNIC STUDIES

The Research Institute on Immigration and Ethnic Studies (RIIES), during fiscal year 1977, more successfully than ever continued to carry out a program fostering the ongoing study of the impact of contemporary immigration upon and its discernible implications for the future of the United States and the internal community.

During the past year, the RIIES staff brought to fruition its contribution to the commemoration of the Bicentennial of the American Revolution. In November 1976 the Institute convened a three-

day national conference which explored the topic of "The New Immigration: Implications for the United States and the International Community." Participating were two hundred registered guests representing academia, governmental and diplomatic circles, foundations, and special interest groups, including participants from France, Canada, the Dominican Republic, Mexico, England, Germany, Puerto Rico, and Colombia.

In addition to its value as a contribution to the nation's Bicentennial celebrations, the conference was important because it marked a turning point for the Research Institute in its efforts to bring together what had been (for want of an identifiable "clearing center") disparate streams of research and discrete, compartmentalized foci of study.

Before the conclusion of the national conference RIIES had already begun negotiations for publication of the conference proceedings, continued research on topics revealed at the conference as well as *lacunae* uncovered therein, and continued development of public and professional information channels.

RIIES has sought to strengthen cooperative relationships with other units of the Smithsonian in order to utilize the varied media, programmatic and educational networks, and skills available within the Institution. Links were developed between RIIES and the Division of Performing Arts and the Smithsonian Associates for co-sponsorship of a performance by an immigrant artist-musician, a documentary film presentation by a Cantonese-American ethnocinematographer and a workshop-seminar co-sponsored by the Office of Symposia and Seminars on "Re-evaluating the Asian-American Image: Themes in Sociological Literature."

A number of small research projects were completed this year. The projects attempted to locate sources of data for various populations, including rural and urban migrant workers in California, Vietnamese refugees at Camp Pendleton, California, and Puerto Ricans and Virgin Islanders in New York City. Two bibliographies were completed through RIIES funding. One dealt with immigration to the United States since 1965, and the other with Caribbean immigration. RIIES funded research resulting in a taxonomy of immigration theory. Research continued into the characteristics of new immigrants to the United States and the implications of this continuing immigration.

Research also continued into sources of data on United States immigration and immigrants, and the quality of those data. The project was expanded to include sources of international migration data and a consideration of methodologies used to study immigration. Research on a bibliography dealing with the immigration of women was initiated. This research will focus on the characteristics and impacts of the process upon the participants. Planning was completed for a study of non-European immigrant families, to be carried out in 1978. Preliminary probing was begun on research on the Panama Canal Zone and the study of immigration patterns and policies in Egypt.

National Museum of Natural History

The National Museum of Natural History opened its new Naturalist Center in December 1976 and put out a welcome mat for a large group of amateur naturalists. The Museum's exhibits have shifted to a style of conceptual presentation that requires fewer specimens and brief labels. Increasingly, visitors find that looking at specimens in glass display cases is not adequate; they want to touch, examine, and test. To satisfy their curiosity, they need study collections placed at their disposal. The Museum reserves its primary study collections for the use of scientists and scholars, but at the Naturalist Center an alternative has been assembled, a collection of specimens that is not composed of irreplaceable one-of-a-kind objects. Amateurs may handle this systematic collection, see how it is managed, and be able to compare these items with their own. The response has been enthusiastic. Thousands have visited the Center's spacious work area located on the second level of the Museum's new West Court Building. Many have brought with them materials or photographs of materials that they want to have identified and learn about. Docents on duty assist visitors and explain the Center's reference facilities. What commences as mild curiosity often grows into fascination and deeper interest. There is an increasing number of regular users working on projects of special interest.

Scientists recently became aware that lichen growth was disfiguring the monumental stone tablets left by the Mayans in Guatemala and Honduras. Infestations of these plants were penetrating and eroding the stone, blurring and softening the sharp details of the inscriptions carved by the Mayans.

The National Museum of Natural History lichenologist, Dr. Mason E. Hale, was invited by authorities to study the problem at Quirgua, Guatemala, and Copan, Honduras. Funding was provided by the Smithsonian and the National Geographic Society. Dr. Hale found the monuments densely covered by lichens, the growth of which posed a twofold threat. Rock crystals were being broken up by moisture in the lichen cover, swelling when it rained and shrinking when it was dry and, at the same time, rock minerals were being disintegrated by lichen acid excretions. Asked to recommend a method for controlling this, Dr. Hale experimented with mild bleach, borates, and phenolic solutions that Europeans have used in recent years to combat lichen growth on tombstones and buildings. He discovered that a single spraying of a sodium hypochlorite commercial bleach on an afflicted area killed the more sensitive lichen and after four months made it possible to brush the rock surface clean with a soft brush. Tougher lichen crusts had to be sprayed a second time. Under Dr. Hale's supervision a two-year spraying program was initiated to clean the monuments at Quirgua and Copan. He is now looking for another spray solution that will leave an active residue and prevent the airborne lichen from colonizing the monuments a second time.

In August 1976, Soufrière Volcano on the island of Guadeloupe in the French West Indies appeared ready to erupt. Dense clouds of ash were spewing from the volcano, and hundreds of earthquakes were recorded each day. French authorities ordered the immediate evacuation of all 72,000 persons living on the flanks of the volcano. A French scientific team was on the scene and, at the invitation of the government of Guadeloupe, National Museum of Natural History volcanologist, Dr. Richard S. Fiske, assisted in monitoring the volcano's activity.

In the weeks that followed, Dr. Fiske and his French colleagues installed tilt-monitoring stations on the flanks of the volcano. Rods 40 to 50 meters apart, forming a square, triangle, or line, were set into the slopes and optically surveyed to detect slight changes in



Above, Dr. Robert Gibbs (standing), National Museum of Natural History ichthyologist, and biological team ready depth-sampling gear as part of their research to determine what impact industrial chemical wastes are having on deep-ocean fishes and other animal populations in the Atlantic. *Below*, Dr. Mason Hale, National Museum of Natural History lichenologist, sprays Mayan monument that was being damaged by lichen growth. Authorities at Quirgua, Guatemala, and Copan, Honduras, invited Dr. Hale to help them solve the problem.





City streets of the capital city of Guadeloupe in the French West Indies are deserted following evacuation. The active Soufrière Volcano looms in the distance. At the invitation of the government of Guadeloupe, National Museum of Natural History volcanologist, Dr. Richard S. Fiske, assisted a French scientific team in monitoring the volcano's activity. *Below:* Scientists at a tilt station are checking the Soufrière's volcanic activity.



ground tilt. If tilt occurs, it is a warning that the volcano is being inflated by rising magma and is in danger of erupting violently.

After the crisis on Guadeloupe and the evacuation of mid-August 1976, the volcano continued to be restless for the rest of the year. Fifty to a hundred earthquakes were detected each day, and steam and ash billowed almost continuously from the summit of the volcano; however, scientists monitoring the tilt stations were not able to detect any significant swelling of the volcano, and the government began to allow the evacuated people to return to their homes. In early 1977, the volcano's tempo of activity began to dwindle and by spring things had returned to normal. French scientists are employing the tilt stations and other monitoring methods to keep a close watch on Soufrière, as the island begins to recover from the serious socioeconomic disruption caused by the temporary relocation of one-quarter of its population.

Tilt stations have been established now with Dr. Fiske's assistance on the flanks of three potentially dangerous Lesser Antillean volcanoes: Montagne Pelée (Martinique), Soufrière (St. Vincent), and Soufrière Hills (Montserrat).

A biological team headed by the National Museum of Natural History ichthyologist, Dr. Robert Gibbs, is trying to find out what impact industrial chemical wastes are having on deep-ocean fishes and other animal populations in the Atlantic. Two research cruises were made on National Oceanographic and Atmospheric Administration vessels to a dump site for industrial wastes abutting the continental slope one-hundred miles off the coast of New Jersey. Hundreds of marine organisms were taken at different depths with an electronically operated discrete-depth sampler. Dr. Gibbs was familiar with many of the fish captured from experience gained earlier in project "Ocean Acre," a survey that has amassed data about the life histories and vertical distribution of deep-sea fishes in a column of ocean off the coast of Bermuda.

Much of this Ocean Acre work—the only multi-season survey of the vertical distribution of Western Atlantic fish ever conducted—was applicable in the dump-site study. Because the pollutants disperse rapidly, dropping into the ocean depths and layering out, Dr. Gibbs was particularly interested in those fishes that he knew stay in the twilight zone depths during the day and then relocate nearer the surface during the evening hours. Dr. Gibbs' thought

was that these fishes were prime candidates to carry the pollutants. Fishes and other organisms sampled at the two cruises are now under study. Scientists at the University of Rhode Island, Woods Hole Oceanographic Institution, and the Amsterdam Zoological Museum are also participating in these studies.

As the dumping continues, the data Dr. Gibbs' team has amassed about the distribution, abundance, and habits of these organisms will provide a baseline that will make it possible to detect change, if any, in the fish and animal populations at the site.

On the July 1975 trip, water conditions at the site were complicated because of the presence of a large, warm-water eddy, 100 miles in diameter and 600 meters deep. Easily seen and followed through satellite photography, the eddies originate when they are pinched off the Gulf Stream in the region of Nova Scotia and New England. They move to the west and south parallel to the continental slope until they are sucked back into the Gulf Stream, some of them reaching the vicinity of Cape Hatteras. Apparently the dump site is regularly traversed by these eddies.

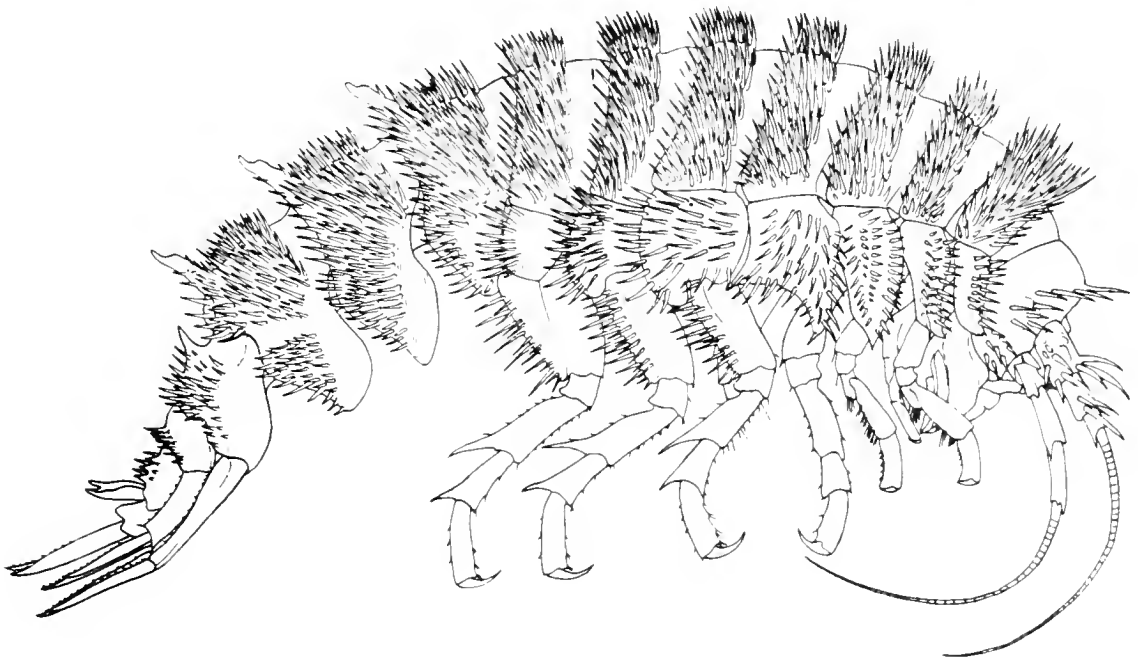
Smithsonian scientists recovered an abundance of typical Sargasso-sea fishes in the core of the eddy, along with other fishes characteristic of the Slope Water that lies shoreward of the Gulf Stream. But the farther west from the core they sampled, in the direction of the continental slope, the fewer fish there were. Assuming that the ships and barges carrying wastes are traveling no farther away from land than is necessary, most of the dumping is probably taking place along the western boundary of the dump site. The paucity of fish in this area suggests that the dumping could be affecting fish population.

The National Museum of Natural History is the only major science institution in the United States where full-time taxonomic studies are being conducted on amphipods, tiny shrimplike marine creatures crucial to monitoring programs that guard against marine pollution off the coast of southern California. By understanding the physiological tolerance of amphipods to oil and sewage, scientists are able to determine the level at which pollution will disrupt the entire marine ecosystem.

The Museum's Dr. J. Laurens Barnard has published 120 papers on amphipod taxonomy since joining the staff in 1964. Because of



Dr. J. Laurens Barnard in his laboratory. Dr. Barnard's taxonomic studies of amphipods have been invaluable to monitoring programs that guard against marine pollution off the coast of southern California. (Photo by Doc Dougherty)
Below: Amphipod (*Urechakoviella echinophora*). (Drawing by Clarence Shoemaker)



his research, the biological characteristics of California amphipods are so well known that scientists in that state are able to make them the basis of an important part of their pollution safeguard technology. Seven counties and two urban areas in California now monitor the water near sewage outfalls. If variations in the populations of amphipods are detected, an investigation follows.

Large die-offs of amphipod populations mean that chromates or other heavy metal industrial pollutants have probably come out of the sewer. Another sign of trouble is the presence of certain species of amphipods known to feed on harmful sewage pollutants.

Amphipod populations also warn of water-quality deterioration caused by offshore oil well and tanker spills, and Dr. Barnard currently is working on studies of amphipods living in two bays on the coast of southern Australia where tanker ports are to be established. They are the only two large bays on the southern Australian coast, and if pollution occurs there it could mean the death of all the marine and estuarine life in one major biological region of the world. Three large descriptive volumes have been published on the region's amphipods with four more to come, and the Australians are using the information to plan monitoring programs that will protect their waters from deterioration.

Museum geologist Dr. J. W. Pierce has been studying sediment discharge into the Chesapeake Bay and into the waters off the coasts of North and South America. One of his discoveries is that much of the sediment suspended in water is included in aggregates, composed of mineral grains and organic matter. Phytoplankton often are associated with the aggregates, as are bacteria. The fine mineral particles and organic matter have the ability to absorb some trace metals and pesticides. Thus, the aggregates often are micro-environments consisting of small mineral grains, organic matter, bacteria, phytoplankton, pesticides, and metals that may bear little relationship to the environment of the stream or estuary as a whole. Fish, decapods, and other grazers and filter feeders ingest these tiny aggregates (5 to 100 millimeters in diameter) for their food value, and at the same time, are exposed to the metals and pesticides. Larger mineral grains usually are not associated with organic matter and phytoplankton, and Dr. Pierce sees no evidence that these larger grains provide the same micro-environment as the aggregates.

Other sediment studies conducted by Dr. Pierce bear on the problems that can arise when the mass of discharged sediment becomes so great that it causes excessive siltation of harbors, clogs rivers, overwhelms benthic communities, and degrades the esthetic value of recreational water areas. Dr. Pierce has shown that, for the Patuxent River Basin in Maryland, as much as 82 percent of the sediment transported by the streams came from construction sites which occupied only 23 percent of the area of the Basin. Most of this material is deposited in the upper Patuxent estuary, resulting in a filling rate of 3.7 centimeters per year.

Working with scientists from the Smithsonian's Chesapeake Bay Center, Dr. Pierce is also attempting to determine the amount of sediment discharged from different land uses in the Rhode River watershed, a tributary to the Chesapeake Bay. Several small watersheds, each with multiple land uses, are monitored to determine how much sediment is derived from each watershed. Monitoring is also done to determine how much is deposited in tidal marshes and on mudflats and how much is exported to the estuary proper.

Southwestern Afghanistan's Sistan Desert, a 5,000-square-mile area the Afghans know as Dash-i Jehanum, "Desert of Hell," is a country that Lord Curzon once described as one of the most unattractive, inhospitable, and odious places on earth. It is this region of solitude and sand that National Museum of Natural History archeologist Dr. William Trousdale has been investigating.

Once this region welcomed man. During long periods from the sixth century B.C. until the fifteenth century A.D., hundreds of thousands of persons lived there, supported by such agricultural plenty that geographers called this area the "granary of the east." Today, vast sand dunes have buried much of what has survived of this civilization, covering manor houses, villages, dozens of palaces, temples, forts, vast walled compounds, and at least three cities a square mile in extent. The most spectacular of the ruins that still stand belongs to the Islamic period, particularly to the Ghaznavid and Timurid empires which ruled the major portions of the Iranian world during the eleventh and fifteenth centuries. Part of the Trousdale team's work was to photo-document what still stands of these Islamic ruins, which are crumbling so rapidly that within fifty years more than half of what remains today will be gone. It is probably the best place in the world, and perhaps the only place,

to study unaltered fifteenth-century sacred and secular Islamic architecture.

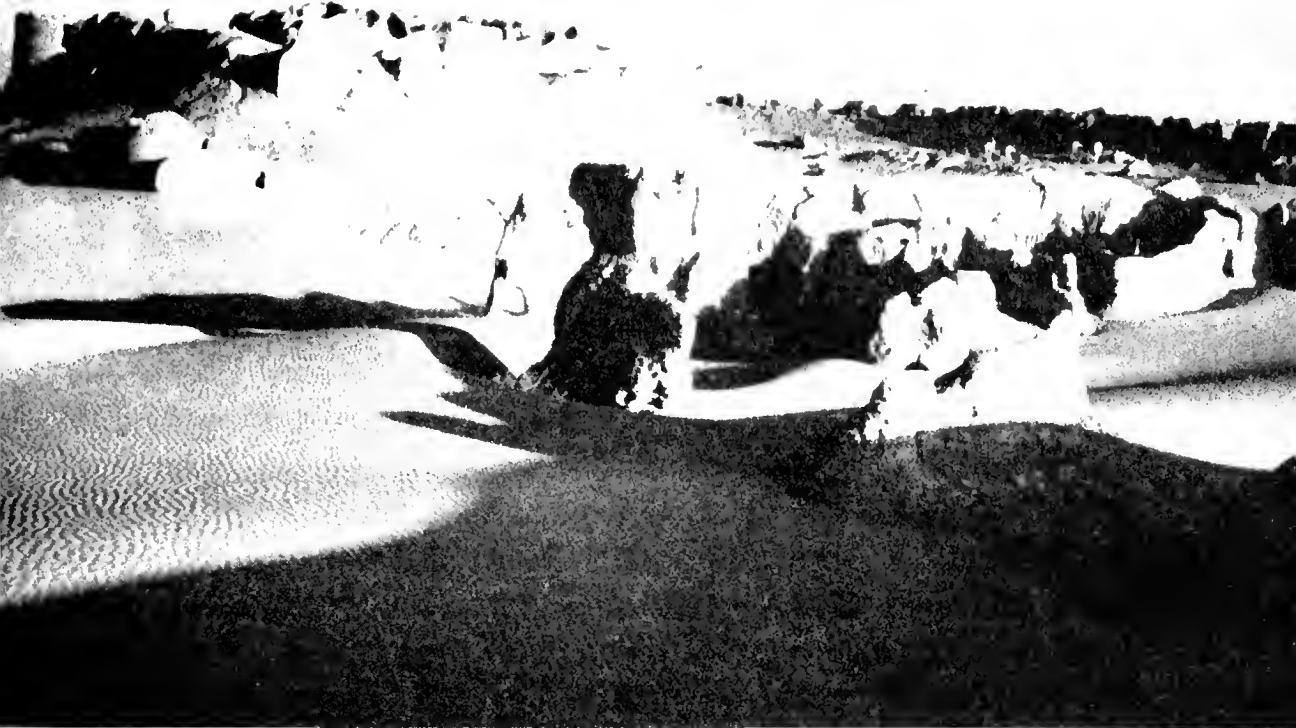
Dr. Trousdale's excavations have revealed the key to Sistan's past prosperity—a sophisticated system of dams and canals that controlled the waters of Afghanistan's Helmand River. At Sar-O-Tar, the Sistan's most remarkable urban complex, water to supply the city and its neighboring farms traveled fifty miles through a huge, high-banked canal. Dozens of smaller canals, some of them longer than the great trunk itself, watered the surrounding region. Dr. Trousdale's team mapped the city's canals, discovered how the ancient gravity-fed irrigation system had worked and identified crops that the canal water had nurtured.

Sistan's complex system of water distribution dates back to the third or second millennium B.C. Neither the opening nor the closing dates for this unknown civilization have been determined yet, but it is known that in addition to being superb engineers, these people manufactured elegant stone weapons and fine polychrome pottery.

The first known period of sanding and abandonment took place in Sistan before the first century B.C. From the first century B.C. to the third century A.D., another period of occupation was archeologically documented by Dr. Trousdale through coins, and storage jars stamped with the insignia of the third-century Crown Prince Shapur and others. Then from the third to the ninth century A.D., the Sistan appears to have been deserted again.

The Sistan's last period of occupation began in the ninth century A.D. Ancient historians record that Genghis Khan's hordes sacked Sar-O-Tar in the thirteenth century A.D., ending two centuries of prosperity. Evidence of this decline as well as a revival that came a century later under the rule of Tamerlane was uncovered by Dr. Trousdale. Another political decline followed a century later. The canal system broke down, and sand blew out of ancient lake beds, burying the region, driving out the population, and sealing off the area. Today, only roving Baluchs and a few Afghan soldiers stationed at small military posts remain in Sistan.

Dr. Trousdale hypothesizes that the periodic sanding of the Sistan may be a cyclical phenomenon. Twice, after periods of desolation and emptiness lasting from 600 to 1,000 or more years, the region cleared itself of sand and was reinhabited by man. It is not beyond the realm of possibility that someday Sistan may flourish



Sar-O-Tar, a remarkable urban complex in southwestern Afghanistan's Sistan Desert; this region inhabited from the sixth century B.C. until the fifteenth century A.D. is being investigated by a team of scientists headed by Dr. William Trousdale, National Museum of Natural History archeologist. *Below*; Dr. Trousdale examines an inscribed funerary tile recovered from a fifteenth-century mausoleum.



again and that the study he has made of the area's ancient and contemporary hydrology and agriculture may assist in this rehabilitation.

Lakes and rivers that are sources of drinking water are being monitored by ecologists who rely on variations in the density and composition of certain aquatic insect populations to help warn them of the onset of water degradation. Aquatic insects are also under scrutiny by public health officials as potential transmitters of disease. Before studies and programs based on this knowledge can be fully developed, basic taxonomic keys must be produced so that ecologists and public health experts can have at their fingertips biological information with which to identify aquatic insects throughout the world.

The National Museum of Natural History's Dr. Paul J. Spangler and Dr. Oliver S. Flint, Jr., are working on aquatic insect keys needed in South America, but have found it very difficult to acquire sufficient study material to solve biosystematic and zoogeographic problems. For this reason, the opportunity to train and work with three Peace Corps entomologists in a five-year comprehensive survey of all of Ecuador's aquatic insect fauna was welcomed by the two Smithsonian scientists as an important opportunity. When the study is completed, it will mark the first time a South American country has ever had all of its aquatic insects surveyed.

Collecting at localities throughout Ecuador, under the supervision of Dr. Flint and Dr. Spangler, Peace Corps entomologists Andrea Langley and Jeff Cohen from 1975 through 1977 shipped thousands of aquatic insects to the Museum of Natural History. Peace Corps entomologist Joseph Anderson is expected to continue the collecting through 1979. Specimens are sorted at the Museum and one set is returned to the Tumbaco Experimental Station near Quito, Ecuador. The Museum is distributing its specimens to investigators who will publish authoritative studies, banking the remainder of the material in its reference collection where it can be made available to future workers.

Dr. Spangler, an authority on water beetles, is incorporating survey material into several generic revisions he has underway of the Western Hemisphere's aquatic beetles, and is investigating a genus of little-known water scavenger beetles that were collected by Langley and Cohen from the water-filled pods of *Heliconia* plants

growing in the lowland forests of the Amazon Basin in eastern Ecuador. He has made several trips to Ecuador to train the Peace Corps workers and to collect. On one of these trips Dr. Yiau-Min Huang of the Smithsonian's Medical Entomology Project accompanied him and during seven weeks of field work reared more than 2,000 mosquitoes from the larval through the pupal to the adult stage, thus providing the Museum of Natural History with one of the best collections of these aquatic insects available from South America.

Dr. Flint, a specialist on caddisflies, is finding the Ecuador material pertinent to studies he has in progress on the fauna of the Central Amazon Basin and the northern coastal ranges of Venezuela. In addition to the production of keys, one of the great benefits of the Ecuador study is to further refine knowledge of the pattern of distribution of various known types of South American aquatic insects. Dr. Flint is finding that caddisflies he has studied from Costa Rica and Venezuela and thought were restricted to those regions are also distributed south along the Andes slope as far as Ecuador.

National Zoological Park

The National Zoological Park enjoyed an event-filled year in 1977. New exhibits proved popular with both visitors and animals. Educational innovations helped the visitors to better understand the animals, their importance, and the National Zoo's responsibilities. Attractive and functional graphic presentations also aided the visitor. Research into visitors' expectations and subsequent impressions enhanced exhibit construction. For the first time in the Zoo's long history, all facets of a visitor's experience were in the Zoo's domain, when the Friends of the National Zoo (FONZ) took over operation of all food and concession services. Scientific studies continued to develop new understanding of the behavior, sociology, communication, and nutritional needs of rare and endangered animals. Health advances were made and shared broadly with other zoos and institutions.

THE ANIMAL COLLECTION AND NEW FACILITIES

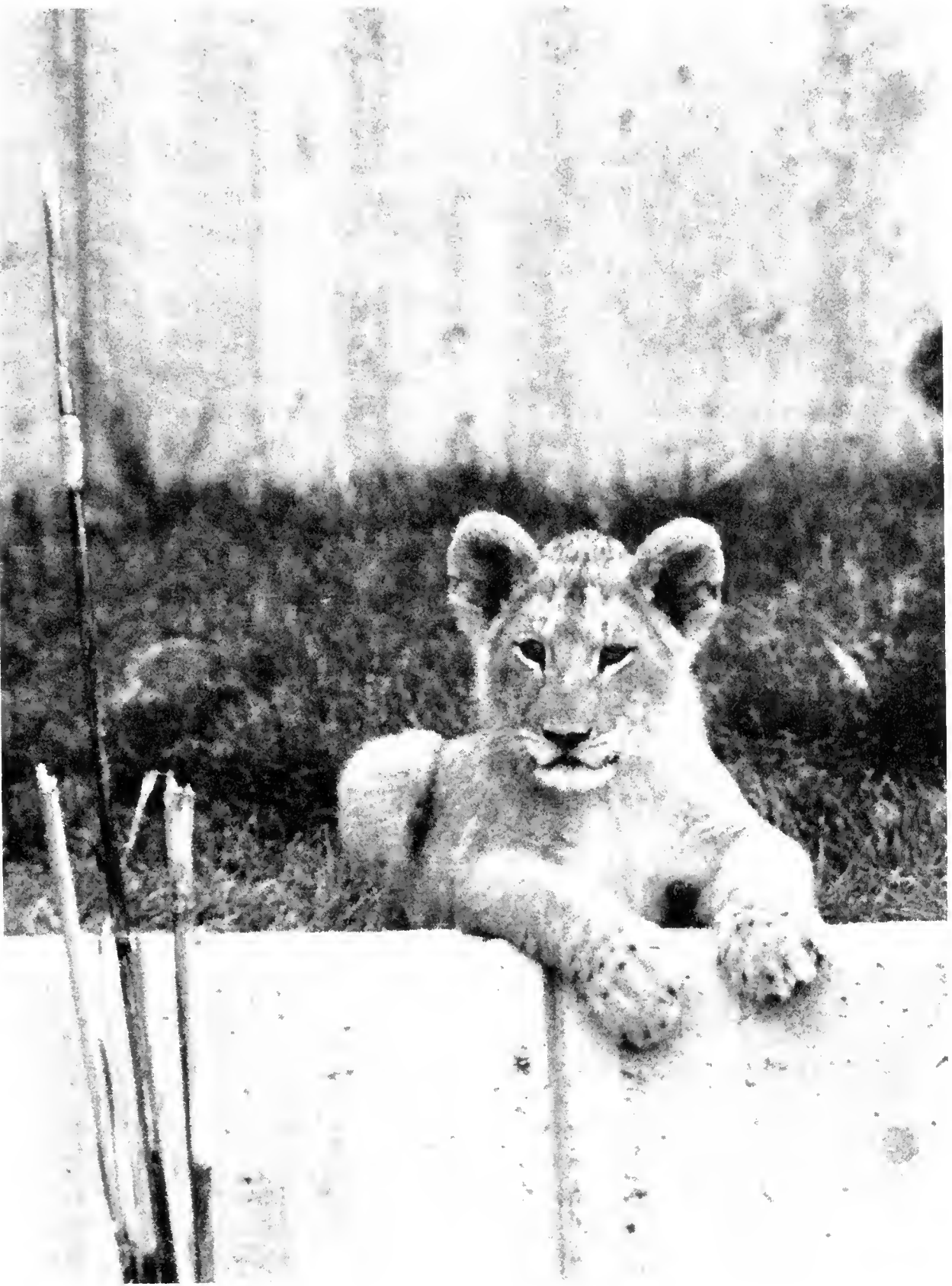
Fiscal year 1977 saw the first full year's operation of a new big-cat complex, the Dr. William M. Mann Lion-Tiger Exhibit. By the end of summer 1976, it was filled with lions, tigers, leopards, clouded leopards, and jaguars. The new complex permitted the important addition to the collection of one male and three female Atlas lions on loan from the National Zoo of Rabat, Morocco. These lions and the few remaining in Rabat are among the last members—all in captivity—of the subspecies *Panthera leo leo* extinct in the wild since the 1930s. The complex itself was selected as one of ten outstanding examples of federally sponsored architecture in 1976.

The new Education-Administration Building was occupied in February 1977, by staff of the National Zoo. In addition to offices of the Director, Deputy Director, Education and Information, and Management Services, it houses the executive offices of the Friends of the National Zoo. The building has a low profile with grassy, sloped sides—a visually pleasing and an energy-saving architectural style.

The building houses the Zoo Library which supports research and management activities. It also contains classrooms and a 300-seat theater where weekend visitors enjoy informative wildlife and zoo films in air-conditioned comfort.

A resources room is now being readied for use in 1978. This room will serve as a self-teaching library for family groups and others who wish to know more about particular animals they have grown fond of or curious about during their Zoo visits. Art exhibits and changing graphic presentations will welcome each visitor to the Education-Administration Building. Information can be obtained by visitors and their questions answered by knowledgeable Zoo docents, who will also be sure visitors are made aware of unique events taking place in the Zoo on the days of their visits.

Also, the Bird House area was renovated. The crane area emphasizes barrier-free design and breeding potential; already the sarus crane and Stanley's crane have produced young. Four outdoor exhibits for hardy bird species were constructed. A new Flamingo Exhibit allows year-round exhibition with a heated, glass-fronted house with pool and sand floor for winter. The front of the Bird House is approached through three waterfowl ponds, which include natural nesting conditions. Off-exhibit yards are available for rais-



Atlas lion cub born to one of several Atlas lions on loan to the National Zoological Park from the National Zoo in Rabat, Morocco. The Atlas lion has been extinct in the wild since the 1930s.

ing young birds. The interior of the Bird House was redone to demonstrate relationships between species.

In the Small Mammal House, old, small metal cages in the nocturnal room were replaced with longer, interconnecting block cages. This allows more space per animal and permits the combination of areas for larger or more active species. Elsewhere in the building, natural materials, improved exhibits, and experimental mixed-species exhibits are featured.

New bear exhibits, one for polar bears and another for grizzlies and other species, housed animals by August 1977. These exhibits provide natural-appearing rock work, large water moats, and free space for the bears. The Polar Bear Exhibit invites the visitor to an exciting underwater view of the animals. The entire polar bear area simulates a large iceberg.

In all, two-thirds of the new animals added to the collection in fiscal year 1977 were born at the National Zoo. The gravest loss was the death of the American black bear, who had been the official Smokey Bear for twenty-six years. Other losses were the female Asian elephant Shanthi, the male African forest elephant, Dzimbo, and a male Chinese alligator which had been added to the collection in 1937. Noteworthy additions to the collection included markhors, the first at the National Zoo in over twenty years; the Atlas lions; three Aldabra tortoises; Caribbean flamingoes and kookaburras. For the Zoo's breeding efforts with the rare kiwi, the American Association of Zoological Parks and Aquariums awarded the National Zoo one of its top honors, the Edward Bean Award. In addition, the Zoo received a conservation award from the Association for the fiftieth successful breeding of the endangered pygmy hippopotamus.

NEW STRIDES IN VISITOR EDUCATION

Other awards recognized the National Zoo's emphasis on realizing the educational importance of the collection. Two films produced to complement the new Lion-Tiger Exhibit were especially well received. *The Big Cats And How They Came To Be* received the Golden Eagle Prize of the Council on International Nontheatrical Events. The Zoo was invited to show *Big Cats* during the International Week for Education and Teaching films in Berlin; at the Fourteenth Yorkton International Film Festival, Yorkton, Saskatche-

wan, Canada; and Sixth International Film Festival in New Delhi India. The other film, *Tiger*, won the first prize audiovisual award at the American Association of Zoological Parks and Aquariums annual convention in October 1976. A film, *Zoo*, produced by the Friends of the National Zoo (a service organization made up of dedicated and energetic lovers of the National Zoo has won over a dozen national and international awards. It is available to schools and libraries throughout the nation.

Other activities and products to enhance a visit to the Zoo were tours for school groups, including special guides for handicapped persons, new bilingual (Spanish and English) labeling of all exhibits; and *ZooBook*, a guide, of such quality and importance that it survives the owner's visit to become an often-used addition to home libraries.

A new trail system has been developed to make it easier for visitors to see the animals. Each trail is marked by totems with attractive pictographs of major animals to be seen on it, as well as by footprints of a "theme" animal for that trail.

RESEARCH, CONSERVATION AND ANIMAL HEALTH

As the nation's Zoo, the National Zoo in 1977 did more than ever before to disseminate its learning in animal management, health, and basic research to other zoos and concerned institutions. Over forty publications issued from National Zoo staffers. A number of students and future zoo careerists were hosted and trained at the National Zoo. Cooperative breeding agreements saw over 160 animals belonging to the National Zoo on loan to other zoos, and 70 animals were on loan from others to the National Zoo. Zoo veterinarians conducted seminars for professionals of other zoos on health issues.

Zoo scientists made presentations before such organizations as the American Association of Zoological Parks and Aquariums, Animal Behavior Society, Ornithologists' Union, Wilson Ornithological Society, American Association for the Advancement of Science, and a London symposium on breeding rare and endangered species. On matters of such common interest as the breeding of exotic animals and diseases affecting them, the National Zoo sponsored two symposia at which national authorities considered ways to improve Zoo performance. The Front Royal Conservation and

Research Center of the National Zoo, in the short space of its three years' existence, is on the road to becoming one of the nation's focal points in the cooperative breeding of irreplaceable animals and field research into their behavior.

In basic research, the National Zoo continued its diverse activities to improve awareness of the influences on rare and endangered animals. Studies in Venezuela have determined the carrying capacity of the habitat for howler monkeys, *Alouatta seniculus*; that patterns of competition and coexistence among cebids and callitrichids are functions of habit and feeding strategies; and that fox pairs forage together, but do not hunt cooperatively. Vocal repertoires of bird species in different habitats are being studied, as are the thermal ecology of South American pond turtles and the population dynamics of the caiman. In other field studies, a Zoo researcher developed a framework for understanding how the physical structure of sound relates to motivation and to information communicated by vocalizations of mammals and birds.

Also studied were the maternal care and juvenile behavior of harbor seals, which led to techniques for the care and management of harbor seals. Eastern blue birds were studied to determine clutch size and reproductive success. Studies in Panama seek to understand the sources of natural selection acting upon vocal communication in congeneric wrens. A Zoo research associate in Java undertook a study to see if the number of Javan tigers at the Meru Betiri Reserve warranted a management plan for their future protection. Many other studies yielded basic scientific data and critical information about the complex web of interactions between exotic animals and their natural habitats. Many health studies were developed to improve the clinical care of exotic animals.

FRIENDS OF THE NATIONAL ZOO

During the past year, expanded Zoo support programs characterized efforts of the Friends of the National Zoo (FONZ), a not-for-profit organization established to augment the Zoo's programs. A new, diversified educational campaign utilized 50 volunteer guides and many printed and visual materials to impart a wider understanding of zoology to more than 30,000 touring school children. Bimonthly publications, year-round classes, lectures, films, trips, and other special events continued to be offered to the 12,000 FONZ

members. The FONZ-managed restaurant, gift shop, trackless train, and parking lot offered improved services to the public.

Additionally, approximately 300 FONZ volunteers assisted National Zoological Park scientists in animal behavior studies, and 50 Junior members staged animal-themed puppet shows daily through the summer.

The great majority of net revenue generated by FONZ activities this past year has been used in furtherance of Zoo education programs. In particular, a \$52,000 grant program supported a National Zoo summer intern program along with various symposia and conferences conducted at the Zoo and the Front Royal Conservation Center.

Further detail of FONZ's financial operations for calendar year 1976 (its fiscal year) is shown below. In addition, a percentage of the restaurant and parking concessions are available directly to the Smithsonian for the benefit of the Zoo and are reported as income in the Financial Report of the Smithsonian.

FRIENDS OF THE NATIONAL ZOO

Financial Report for the Period

January 1-December 31, 1976

[In \$1,000s]

	Revenue	Expense	Net increase/ (decrease) to fund balance
FUND BALANCE @ 1/1/76			\$431
SERVICES			
Membership	\$ 81	\$ 90	\$ (9)
Publications	47	62	(15)
Education ¹	28	97	(69)
Zoo Services ²	1,040	828 ³	212
Totals	\$1,196	\$1,077	\$119
FUND BALANCE @ 12/31/76			\$550 ⁴

¹ Excludes an estimated \$55,000 in contributed volunteer services.

² Includes gift shop, balloon shop, sightseeing trains, parking service, and food service.

³ Includes \$120,690 paid during this period to the Smithsonian under contractual arrangement.

⁴ Funds retained for program activities of the Zoo.

Office of International Programs

The Office of International Programs fosters and coordinates the international aspects of Smithsonian programs and also provides support to United States institutions of research and higher learning, including the Smithsonian, through Special Foreign Currency Program grants. Its functions are carried out by sections designated as the Smithsonian Foreign Currency Program and the International Liaison Section.

SMITHSONIAN FOREIGN CURRENCY PROGRAM

The Smithsonian Foreign Currency Program (SFCP) awards grants to support the research interests of American institutions, including the Smithsonian, in those countries where the United States holds blocked currencies derived largely from past sales of surplus agricultural commodities under Public Law 480. The Program is active in countries where the Treasury Department deems United States holdings of these currencies to be in excess of normal federal requirements, including in 1978 Burma, Egypt, Guinea, India, and Pakistan. Research projects are continuing to conclusion under Program support in the former excess-currency countries of Israel, Morocco, Poland, Sri Lanka, Tunisia and Yugoslavia.

The Smithsonian has received a fiscal year 1978 appropriation of \$4 million in "excess" currencies, which will be used to support projects in the anthropological sciences, systematic and environmental biology, astrophysics and earth sciences, and museum professional fields. The Smithsonian received a fiscal year 1977 appropriation of \$3.5 million in "excess" currencies that is being used to support over fifty projects in these disciplines. From its inception in fiscal year 1966, through fiscal year 1977, the SFCP has awarded about \$30 million in foreign currency grants to some 191 institutions in 32 states and the District of Columbia. Within the framework of the Program, the Smithsonian will make a fourth and final contribution of \$1 million in Egyptian pounds in support of Egypt's effort to save the submerged temples of Philae in Nubia.

INTERNATIONAL LIAISON SECTION

The International Liaison Section (ILS) provides foreign affairs liai-

son and assistance for Smithsonian activities abroad, and for foreign nationals participating in Smithsonian programs in the United States. In addition to its liaison responsibilities with the Department of State, United States missions abroad, and foreign governments, ILS is responsible for the administrations of foreign students and exchange-visitor programs at the Smithsonian, foreign travel documentation for official Smithsonian travelers, and programming for foreign official visitors to the Smithsonian. Foreign visitors to the Smithsonian during the year have included those from the People's Republic of China Institute for Foreign Affairs and His Holiness, the Karmapa Lama from Sikkim.

Radiation Biology Laboratory

Plants and animals exist in a sea of energy. This energy is available in numerous forms, but the most significant for plants is sunlight, from which they are capable of producing their own food through photosynthetic reactions. This photosynthetic food is used for the growth and development of the plants, and they in turn are ingested as a concentrated form of energy by animals.

In addition, because the environment is exposed at regular, periodic intervals to sunlight as the earth rotates daily, both plants and animals have evolved elaborate molecular mechanisms for using light signals to control their growth and development. These mechanisms do not depend upon trapping large amounts of energy from sunlight, as is needed in photosynthesis. Rather, they depend upon measuring such variables as the length of the day, or changes in the color of the light during the day. From such signals, the rate of flow of energy through the organism or through whole populations may be regulated. The ability to detect these light signals confers upon these organisms a large survival advantage.

The Radiation Biology Laboratory has continued its research emphasis during the last year in several major areas. These are: (1) regulatory processes of plants, such as membrane synthesis and pigment synthesis; (2) environmental processes and energy flow in biological systems, such as photosynthesis and phosphorus metabolism; (3) the measurement of the amount, duration, and color quality of sunlight present in the environment; and (4) the age

estimation of biological artifacts based upon their radioactive carbon content.

REGULATORY BIOLOGY

Algae grow at varying depths in the ocean. Depending upon the depth and the presence of absorbing materials in the water, the color of the light varies with depth. Algae have evolved special protein structures on membranes within the cells which have accessory pigments that enable the algae to absorb the light more efficiently for photosynthesis. These phycobiliproteins, the major light-harvesting pigments in red and blue-green algae, were isolated in their *in vivo* state as phycobilisomes from eight species. All were energetically tightly coupled as reflected by the energy migration to the pigment allophycocyanin, low fluorescence polarization, and high quantum yield.

The energy transfer efficiency from phycoerythrin → phycocyanin → allophycocyanin was slightly smaller at -196°C than at 20°C , indicating that a resonance type of energy migration occurs in the phycobilisomes as previously proposed. The fluorescence quantum yield of phycobilisomes was 0.60 (*Porphyridium cruentum*) and 0.68 (*Nostoc* sp.) similar to that of allophycocyanin, 0.68. The fluorescence quantum yield remained essentially unchanged when the ratios of the phycobiliproteins were varied by growing cells under different spectral quality of light. In *Nostoc* and *Fremyella*, where phycoerythrin was greatly decreased in red light, the quantum yields only varied from 0.68 to 0.60. Allophycocyanin is not rate-limiting in transferring the excitation energy to chlorophyll, because its rate of de-excitation is much faster than the rate of quantum absorption.

The synthesis of the proteins needed for the chloroplasts which are the site of photosynthesis in both algae and higher plants is controlled by an interaction between the cytoplasm of the cell and other organelles. Ribosomes are the organelles at which protein is synthesized.

The relationship between chloroplast, cytoplasm, and prokaryote ribosomes was investigated. Chloroplast ribosomes of the green alga *Chlamydomonas reinhardtii* have a buoyant density distinctly different from reported values for prokaryote ribosomes, but indistinguishable from cytoplasm ribosomes of *Chlamydomonas*.

Chloroplast ribosomes sediment more rapidly during centrifugation on sucrose density gradients than has previously been reported, and thus behave differently than ribosomes of prokaryotes. The slower rates of sedimentation which have been reported earlier appear to be artifacts due to the dissociation of the ribosomes in the gradients during centrifugation.

Chloroplasts and mitochondria in *Chlamydomonas* and bean seedlings (*Phaseolus*) have been examined by electron microscopy for the presence of cytoplasm ribosomes bound to the envelopes of these organelles. Cells were first treated with cycloheximide to preserve any attachment of the ribosomes to the membranes. Ribosomes of the cytoplasm were not closely associated with the organelle envelopes. Thus, it appears that the mechanism for transfer of cytoplasm-synthesized organelle proteins into mitochondria and chloroplasts does not operate in green plants by the secretory process postulated for yeast cells.

The carotenoid pigments and their oxygenated derivatives, the xanthophylls, are responsible for many of the yellow, orange, and red colors observed in both plants and animals. Many of these compounds act as accessory pigments in photosynthesis. β -carotene is an important carotenoid in the diet of animals, because it is a precursor of vitamin A. In many organisms, the carotenoids have been shown to protect against adverse effects of visible light.

In the fungus *Neurospora crassa*, blue light is required to initiate the biosynthesis of at least eight different carotenoid pigments. Inhibitor studies indicate that one or more enzyme activities in the carotenoid pathway are absent or at low levels in dark-grown *Neurospora* cultures and that these activities increase following the light treatment.

Phytoene, a 40-carbon colorless compound, is a precursor of the carotenoid pigments, and phytoene is synthesized from a 5-carbon compound, isopentenyl-pyrophosphate (IPP). The enzyme system which catalyzes the biosynthesis of phytoene from IPP is being investigated. This activity, which is undoubtedly due to more than one enzyme, has been partially purified by differential centrifugation and ammonium sulfate precipitation. Light induces a 9-fold increase in this enzyme activity, and this increase is blocked if cycloheximide, an inhibitor of protein synthesis, is added to *Neurospora* cultures immediately after the light treatment. These results

support the hypothesis that the *de novo* production of one or more of the enzymes required for the conversion of IPP to phytoene is regulated by light.

This enzyme system has been studied in several *Neurospora* albino mutants which produce little or no carotenoids. The enzyme system is present in *albino-1* mutants, and as with wild type, light was shown to induce an increase in the level. The *albino-1* strains are not blocked in the synthesis of phytoene, but in the conversion of this compound to the carotenoid pigments.

The same blue light photoreceptor which is involved in the induction of carotenoid synthesis in fungi is also believed to be involved in the phototropic responses of higher plants. If barley seedlings are grown in the presence of the herbicide Sandoz, the seedlings do not develop the yellow carotenoid pigments nor the green chlorophylls. Such white-grown seedlings, if then exposed from one side to a dim blue light, bend toward the blue light source. The rate of bending is almost identical to the bending rate for untreated dark-grown seedlings. The conclusion is drawn that the phototropic pigment is unaffected by the herbicide treatment and is probably a flavin molecule, since the carotenoid pigments are greatly reduced by the herbicide.

The process of spore germination in the sensitive fern *Onoclea sensibilis* is inhibited by the presence of small amounts of ethylene. If ethylene-inhibited spores are exposed to light, the ethylene inhibition can be overcome. It has not been known if this effect of light is through photosynthesis or through the regulatory plant pigment phytochrome. One of the ways of testing this hypothesis is to determine an action spectrum for the sensitivity of the process to various spectral regions of light. Such an action spectrum has been determined, and the light release of ethylene inhibition has been shown to be a high irradiance response with an action spectrum maximum at 711 nanometers. The response differs from the normal phytochrome-mediated high irradiance response in that there is no activity by blue light. Such high irradiance responses are believed to function through the phytochrome pigment system.

The phytochrome molecule also acts as the receptor molecule for the control of reproductive development. When light signals are received from the environment, either inhibition or promotion of reproductive development occurs that is dependent upon both

the species of plant and the time in the development cycle during which the signal is received. Normally, the red portion of sunlight predominates during the day, with marked increases in the far red portion near sunrise and sunset. Plants apparently respond to the length of time between these two far red signals. In order to do this, the signal must be received at a time when the plant's internal clock reaches maximum sensitivity. When the timing of the clock and the signal are in synchrony, some as yet unknown biochemical change takes place which leads to flowering.

Experiments with barley, a plant that requires long daylengths to flower, have shown that a far red signal must be present eighteen hours after the light comes on, and that if the signal comes either before or after this point, flowering is reduced. A method has been developed to measure directly the changes in the phytochrome molecule in the light during the time when the signal is present. This was previously impossible due to the presence of chlorophyll. The technique removes the chlorophyll by adding the herbicide Sandoz allowing direct determination. Also, it has been found that a second process is involved, beyond that which occurs at eighteen hours, which is required for continued development of the flower. This second process is similarly dependent on a far red signal and occurs several hours after the first signal. It is possible that the sunset signal starts the first process and the sunrise signal the second.

The phytochrome molecule which absorbs these light signals is a photoreversible chromoprotein and is present in all photosynthetic plants. Physiological processes such as seed germination, flowering, dormancy, and pigmentation are also controlled by phytochrome. Sunlight converts the protein from its inactive form to its active form. The active form can then revert slowly to the inactive form in darkness, be converted to the inactive form by light, or be destroyed by normal protein turnover processes in the cell.

This year a comparison was made of the properties of the isolated, purified molecule to those in the undisturbed plant cell. It has been found that the relative state of aggregation of phytochrome in solution is dependent on the nature of the buffer in which it is dissolved. It has also been observed that the rate of interconversion of the active and inactive forms, as well as the spectral properties of the two forms, are affected by the solution

environment. The same conditions which promote the formation of higher aggregates in solution appear to favor spectral properties closer to those observed in intact plants.

Flowering in plants is regulated by the length of the night. When the light is absorbed in the leaves it induces formation of a flowering substance. From the leaves there is transmission of this flowering substance to the apex, where this substance induces flower formation. Salicylic acid has been identified as one of the naturally occurring substances which will affect flowering. In short-day plants of *Lemna perpusilla* 6746 salicylic acid has been found to extend the critical daylength by about two hours. Cobalt is the only other known substance which will affect the critical daylength in more than two plant species.

ENVIRONMENTAL BIOLOGY

Photosynthetic utilization of incident light energy provides the earth with renewable fuels, namely, the carbohydrates comprising the bulk of plants. As early as 1905, it was noted that light energy delivered in flashes rather than continuously caused apparent changes in the photosynthetic utilization of the incident light energy. The Radiation Biology Laboratory has been testing the effects of flashing light on plant growth. Using an electronically controlled fluorescent-lamp flashing system, plants have been grown under different light and dark times.

Previous work using mechanically operated flash units had indicated a minimal light utilization with light and dark periods of about one minute duration. Current work has dramatically shown this to be the case. The major focus of this work, however, has been in the region of the very short flashes where light energy utilization increases and may surpass the utilization found with continuous lighting.

Salt marshes are believed to be among the most productive ecosystems; that is, measurements of the amount of green biomass that accumulates in some low latitude marshes during the growing season is equal to or greater than that accumulated by agricultural crops or tropical rain forests. In order to document this observation in a way that would lend itself to a study of the relationship between productivity and solar radiation, the capacity for CO₂ assimilation has been measured on a daily basis in communities of

salt marsh along the Chesapeake Bay. The specific question is: how much CO₂ is assimilated by plant communities for each unit of photosynthetically active radiation available to the community for this process each day? Measurements have been made during three field seasons. Efficiency for the daily assimilation of CO₂ declines throughout the growing season. On a daily basis, the plant communities which have been studied have the capacity to convert from 0.4 to 4.0 percent of the portion of solar radiation that can be used by photosynthesis (the photosynthetically active radiation, about 50 percent of total incident solar radiation) from radiant into chemical energy.

The measurement of the amount of sunlight and the spectral quality of daylight in 100-nanometer (nm) bands from 400 nm to 800 nm is still in progress along with the monitoring of the total irradiance and total IR to 2800 nm. The three monitoring sites, Barrow, Rockville, and Panama, are yielding much-needed data that are being disseminated to the scientific community for biological research, as well as to local and federal governments for baseline data applied to solar energy utilization. The Barrow site is still serving as a clean-air reference for spectral quality comparison. Panama is particularly interesting. Because of its location (9°N latitude), it exhibits all of the influences tropical climate has on the spectral quality of daylight, and, therefore, is yielding valuable information on "local" disturbances. The variabilities from place to place, and even within the same geographical location, are so great that even an eight-year data base in the Washington-Rockville area is not sufficient to determine trends or periodicities. New normal incident pyrhemeters (NIP) and trackers have been installed at Rockville, and the data, along with a shadow-band device that permits measurement of skylight alone, will help to sort out the various factors that influence the spectral quality of daylight in an urbanized area. The largest areas of variability are in the blue and red areas of the spectrum. These are the two areas which are important in photosynthesis and plant morphology.

A year of uvB data has been collected starting November 1975 using the analog version of the scanning radiometer developed at the Radiation Biology Laboratory. The prototype of a digital model, with selectable integrating periods, has been completed and will replace the units now in the field at Barrow, Rockville, and Panama.

The present data have been collected by sampling every three minutes from before sunrise to after sunset. The integrated values are computed for each hour and each day. The bands are 5 nm wide at the halfpower points and centered at 285 nm, 290 nm, 295 nm, 300 nm, 305 nm, 310 nm, 320 nm, covering the erythral band. Comparisons about solar noon on clear days using the same kind of instrument, one measuring global uvB and the other normal incident uvB, show that only about 40 percent of uvB is contained in the direct beam and 60 percent in diffuse radiation.

Since only one year of data is available, the main trends are annual and are clearly shown in the average daily values for each month. The outstanding feature is the large variation in uvB energy found at Barrow and Panama at sec $z = 2.5$. These variations indicate changes of as much as 20:1. This type of phenomenon indicates that ozone absorption may be the principal determinant of the short wavelength transmission of the atmosphere, but the amount of energy received at the earth's surface is strongly influenced by meteorological conditions. If the ozone level were to change by 100 percent from .24 cm to .48 cm, the global irradiance at 305 nm would decrease from $7.37 \mu\text{W cm}^2 \text{ nm}^{-1}$ to $2.76 \mu\text{W cm}^2 \text{ nm}^{-1}$, a factor of about 3 and not 20 as occurs. Measured values of ozone in the Panama area show small variations occurring, but no changes in ozone that would produce such drastic change in uv irradiance. The data can be used to determine and follow changes in ozone, but ozone values cannot be used to predict uvB values, except on clear days.

Sunlight can also be utilized directly as a source of house heating and hot-water heating. Three solar collector panels with selective black surfaces were installed for testing on the laboratory roof. One system uses a copper black, one a chrome black and, the third an evacuated tubular collector.

Instrumentation using a bank of six Eppley precision pyranometers, each with a different outer dome, provides measurement of spectral irradiance in hundred-nanometer bands, as well as total insolation. Such a pyranometer bank installed parallel with the surface of the collector provides a measure of the incident solar radiation. Correlation of these data with the Radiation Biology Laboratory's solar radiation measurements on a horizontal surface over the past eight years has provided a basis for evaluation of the flat

plate collectors. In addition, the other parameters have been measured directly.

Preliminary test data from these three flat plate collectors indicate that the critical insolation values range from 180 Wm^2 to 620 Wm^2 . Critical insolation values differ between the test collectors as much as 40 percent. The weighted efficiencies based on these critical insolation values show that a collector having low efficiency under steady-state tests and a low critical insolation has a higher system efficiency, based on a long-term evaluation.

The Carbon Dating Laboratory has begun a detailed investigation of the recent geological history of the upper Chesapeake Bay. Dating of materials cored from the Rhode River estuary and the coast of Kent County on the Eastern Shore is underway. Since the Bay was practically nonexistent as recently as 9,000 years ago, this study, and associated analyses of the sediment and pollen, documents the flooding of the upper Bay with rise in sea level, and provides a history of the vegetation and climate regimes of the area for archeologists and geologists, as well as scientists of the Chesapeake Bay Center for Environmental Studies.

The Mediterranean program continues with the dating of samples cored from the Hellenic Trench in order to confirm and refine the details of drastic changes some 10,000 years ago in climate and current already outlined for other areas of the Mediterranean.

Smithsonian Astrophysical Observatory

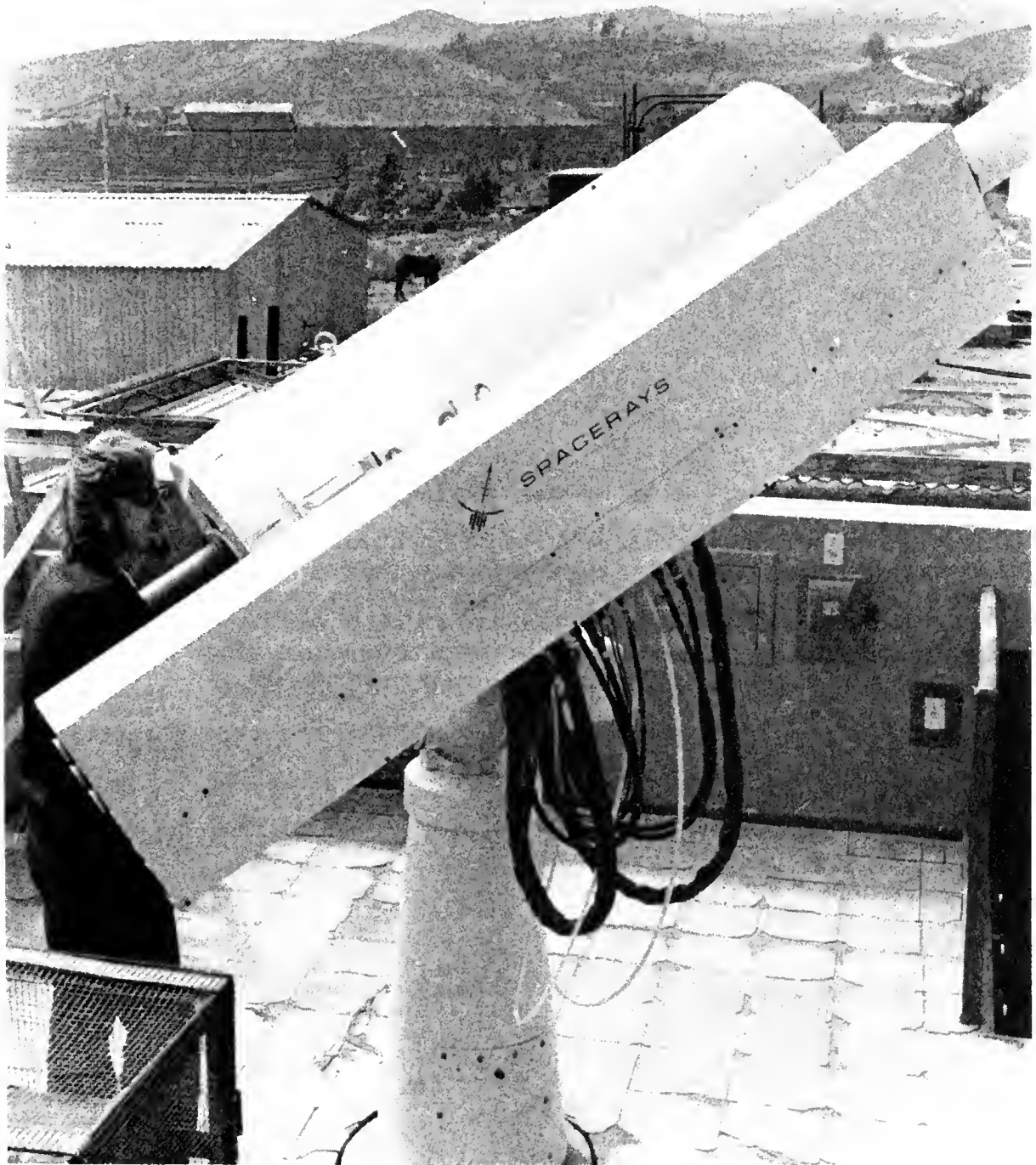
At an international scientific meeting in early 1977, a Smithsonian delegate presented data apparently linking periods of solar variability with terrestrial climate change. Although of intrinsic interest, the findings had particular relevance for the Institution, because they resulted from studies combining modern satellite data with historical records of solar observation, including observations made in the early part of this century by two former Smithsonian Secretaries, Samuel Pierpont Langley and Charles Greeley Abbot.

This continuity in scientific research at the Smithsonian Astrophysical Observatory (SAO) is no mere coincidence. Indeed, SAO was founded in 1890 by Langley as a center for what he called the

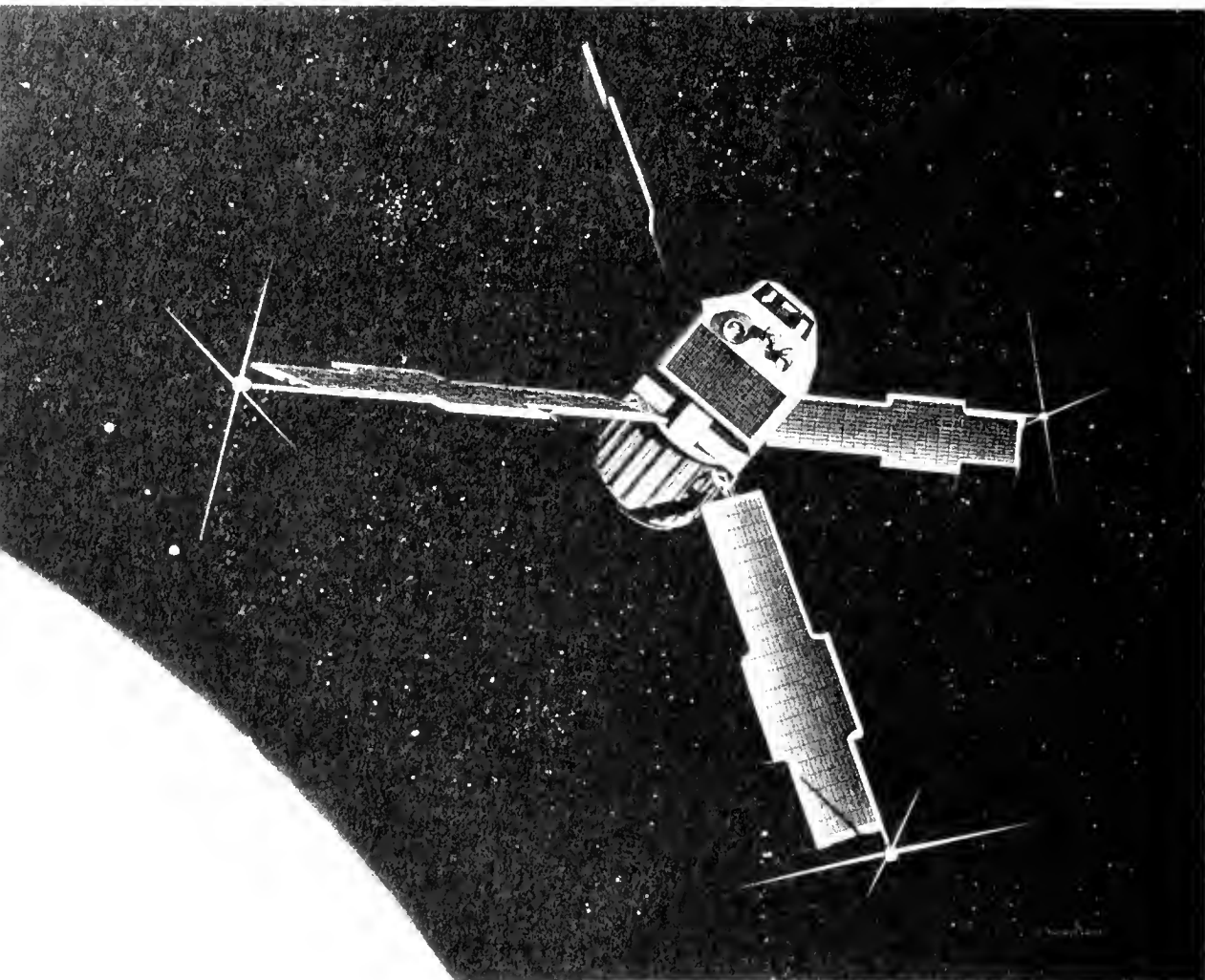
“new astronomy,” an Observatory devoted to the study of the physical characteristics of celestial bodies, rather than merely to their motions. Langley was most concerned with the study of the Sun, but his innovative approach to research laid the foundations for the modern astrophysics now pursued by his successors.

As in almost every branch of science, astrophysics has experienced an explosion of ideas during recent decades. New windows on the universe have been opened by the discovery of radiation in unexpected bands of the electromagnetic spectrum. The expanded use of rocket, balloon, and satellite experiments has allowed observation of this radiation from above the Earth’s obscuring atmosphere. Gamma rays, X rays, ultraviolet light, radio emissions, and infrared radiation are all now observed by Smithsonian scientists almost as routinely as Langley and Abbot once observed optical radiation from the Sun. More importantly, however, scientists investigating a particular problem may now gain a considerable advantage by drawing on this variety of observing resources—by looking through a variety of “windows” at the same phenomena. For example, in the study of the vast gas and dust clouds found between the stars, radio astronomers may “listen” to radio-frequency emissions from the molecular constituents of the galaxy; infrared astronomers may in turn measure the intensity of the thermal radiation from the same region; optical astronomers may count the populations of various chemical species through spectroscopy; and, finally, theorists may bring together the various pieces of evidence to describe the complicated process by which stars are born.

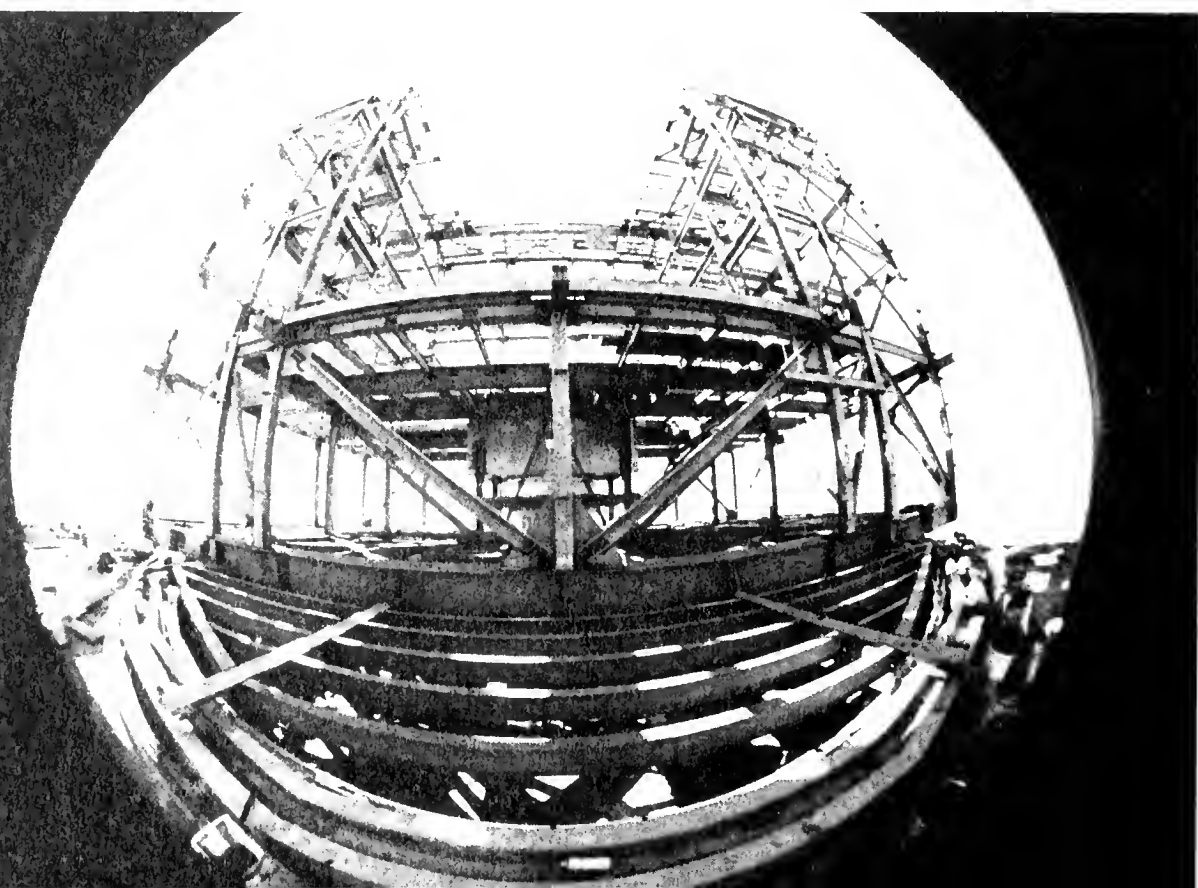
Naturally, only those organizations with a broad research program encompassing many subdisciplines of astronomy are capable of pursuing such a multi-faceted approach. Recognizing the need for such an organization, SAO joined in 1973 with Harvard College Observatory (HCO) to form, under a single director, the Center for Astrophysics for the pursuit of “excellence in astrophysical research.” By developing the potential of both organizations, the Center has assembled the scientific and technical expertise to explore and exploit the full wavelength range of the electromagnetic spectrum, from radio waves to gamma rays. Today, this joint venture is represented by more than 125 scientists and 350 supporting staff members, both in Cambridge, Massachusetts, and at field



Laser tracking system at Arequipa, Peru, part of the worldwide network operated by the Smithsonian Astrophysical Observatory. (SAO photograph)



The High Energy Astrophysics Division of the Smithsonian Astrophysical Observatory has published the *Fourth UHURU Catalog* containing an analysis of observations by the UHURU satellite. An artist's conception of the UHURU satellite is shown above. (NASA illustration) Below: Fish-eye lens view of the Multiple Mirror Telescope (MMT) facility during construction in late 1976 at the Mount Hopkins Observatory, Amado, Arizona. (University of Arizona photograph)



stations around the world. Harvard members are supported by university funds and by contracts and grants from agencies such as the National Aeronautics and Space Administration, the United States Air Force, and the National Science Foundation; Smithsonian members are supported by federal appropriations and trust funds from the Institution and by contracts and grants from government agencies such as the National Aeronautics and Space Administration and the Office of Naval Research. Investigators are grouped roughly by specialties in eight divisions, each headed by an associate director.

The Center for Astrophysics may be considered the largest single enterprise dedicated to astronomical research in the nation, if not the world. While the "new astrophysics" may seem far removed from Langley's "new astronomy," the goals of the Smithsonian Astrophysical Observatory remain essentially unchanged from those established by him nearly a century ago: to understand the basic physical processes determining the nature of the universe.

ATOMIC AND MOLECULAR PHYSICS

The research program in the Atomic and Molecular Physics Division is designed to provide the basic parameters of atomic and molecular physics required in the interpretation of observational data. This work is carried out by both experimentalists and theorists. The experimental work includes the measurement of photoionization cross sections and oscillator strengths for species of astrophysical interest. Theoretical work involves calculations of atomic and molecular structures and of cross sections of the interaction with radiation, by use of a variety of techniques. A wide range of collision processes is also studied.

The theoretical studies concentrated on the development of model-potential methods for the accurate calculation of properties of complex atoms and the construction of a relativistic generalization of the random-phase approximation for studying the properties of highly stripped atomic species.

In the field of molecular structure and processes, progress was made in large-scale *ab initio* calculations of potential energy curves, methods for including electronic continuum functions in molecular calculations, and the use of model-potential and random-phase-approximation methods in molecular physics.

Theoretical studies of the thermosphere of the Earth were carried out in which a comparison was made with *in situ* measurements obtained by NASA's Atmospheric Explorer Satellite Series, in order to obtain a quantitative understanding of the physical and chemical processes. The absorption of solar EUV radiation and photoelectrons in the atmosphere and the photochemical equilibrium in concentrations were calculated. By use of the satellite observations, information on the O₂ concentration, the total ionization rate due to the solar ultraviolet flux, and the thermal budget of the ionosphere can be obtained.

In the laboratory, measurements continued to be made of atomic and molecular transition probabilities and autoionization and photoionization cross sections. For example, measurements were completed of the absolute cross section for the photoionization of atomic oxygen. Emphasis is placed on species that contribute to discrete and continuous sources of opacity and to abundance determinations in the Sun. These measurements are made and used in close collaboration with observational programs from the ground, and from solar rocket and satellite missions. One such close collaboration has resulted in the first positive evidence for the presence of boron in the Sun. This was done by photoelectric measurements of the solar spectrum near 2500 Å. The derived abundance of boron is in agreement with predictions of the light nuclide formation by galactic cosmic-ray spallation in the interstellar medium.

GEOASTRONOMY

The efforts of the Geoastromy Division are directed toward the study of the Earth as a planet. Among ongoing activities are the development of techniques for measuring the motions of the Earth and its crust, satellite-borne instrumentation for studying the Earth, and large-scale computer software for modeling geophysical phenomena.

A major activity was the production of the fourth and final edition of the *Smithsonian Standard Earth*. First published in 1966, the *Standard Earth* was revised and improved in 1969 and 1973. The final version contains parameters of the Earth's gravity field to degree and order 30, a significant advance from the previous solutions and entailing over 50 percent more coefficients. In a related effort, the translocation method for determining station posi-

tions on the Earth's surface was developed, thus making possible determination of long-baseline distances from satellite observations with an accuracy of a few centimeters.

A model of the thermal structure deep in the Earth's crust was developed to describe the driving mechanisms for crustal plate motions. For the first time, this model shows the long-suspected relationship between material buoyancy and the driving force that propels the subducted slab downward in regions where crustal plates impinge.

Analysis of data from the gravitational Redshift Experiment continued in an effort to test the equivalence principle of Einstein's Theory of General Relativity. Accurate geometrical position is used in the method of trajectory solution; and trajectory-data-reduction requirements have been modified to produce the required accuracy. At present, the accuracy of the experiment is at the 200-parts-per-million level.

During the last year, the SAO laser tracking network and its overseas cooperating stations provided routine tracking data to support ongoing programs in geodesy and geophysics. Precision orbital tracking to support the ocean-surface altimeter experiment aboard the Geos-3 satellite and the Earth dynamics measurements on the Lageos satellite were top priority. The network also provided intensive laser tracking coverage of several low-orbit satellites for the improvement of gravity-field models and the study of Earth and ocean tides.

HIGH ENERGY ASTROPHYSICS

The principal activities of the High Energy Astrophysics Division are grouped in three main areas: planning and development of instrumentation for future space missions for orbiting observatories; analysis of data obtained in current or previous missions; and continuing research on energetic phenomena in the universe.

The analysis of observations by the UHURU satellite culminated in the publication of the *Fourth UHURU Catalog*, which lists 339 sources of X-ray emission, or nearly twice the number previously known. These sources include objects within the Milky Way as well as many outside our galaxy. Several of the X-ray sources in our galaxy are associated with neutron stars and black holes; others are in double star systems in which one star can be observed

optically while the neutron star or black hole is optically invisible and can only be seen in the X-ray band. Other galactic X-ray sources are associated with supernova remnants, such as the Crab Nebula, which are produced by the explosion and death of a star. Other sources are found in globular star clusters—conglomerates of several hundred thousand stars.

Outside the Milky Way, X rays are observed from galaxies much like our own, including the giant spiral in Andromeda. Other systems, such as the Seyfert galaxies, quasars, and clusters of galaxies, also emit much of their energy at X-ray wavelengths. The observations of Seyfert galaxies from the UHURU satellite, combined with those from the Ariel 5 satellite, have been used to show that the Seyferts account for a significant fraction of the all-sky diffuse X-ray background, the origin of which has remained a mystery.

The *Catalog* also lists fifty-three clusters of galaxies, the largest single class of extragalactic X-ray sources, and correlations between X-ray and optical properties of clusters have been found. These clusters, themselves the building blocks of so-called “superclusters of galaxies,” may each contain as many as 1,000 galaxies, which, like our own Milky Way, are composed of 100 billion stars. In the early 1970s, observations from the UHURU satellite showed that the X-ray emission from clusters came from an extended region about a million light years across. More recent observations confirm these results and show that, like the superclusters, the emission is produced by a hot gas in between the galaxies.

Observations of extragalactic X-ray sources with the SAS-3 X-ray observatory, produced the discovery of several X-ray objects including the nucleus of a Seyfert galaxy and a cD galaxy in the rich cluster of galaxies Abell 478.

Studies on the origin, detection, and identification of gamma-ray bursts proceeded with the 10-m high-energy gamma-ray reflector at the Mount Hopkins Observatory. A program of observations on the 100-Mev gamma-ray sources was carried out using the atmospheric Cerenkov technique. Data analysis on the Mount Hopkins Observatory High Energy Sky Survey was completed, and a second generation gamma-ray experiment was designed for the 10- to 100-GeV energy region. An experiment to detect hard bursts of gamma rays from primordial black holes was completed, as was an experiment to measure the primary spectrum of cosmic rays.

Instrumentation was completed and calibrated for flight on the HEAO-A satellite, the first in a series of X-ray observations planned for space flight by NASA before the end of this decade. The experiment (a collaborative SAO-MIT effort) consists of a scanning modulation collimator of high sensitivity (1 UFU) and spatial resolution (5 arc sec). The spacecraft was successfully launched on August 12, 1977. Initial data indicate the experiment is functioning properly and is producing highly precise positions for X-ray sources.

The hardware for the HEAO-B experiment, scheduled for flight in 1978, was completed and delivered to NASA. The experiment, a high-resolution X-ray telescope, is expected to produce the first detailed images of X-ray sources. Studies continued on other new experiments including observatory class instruments, such as the 1.2-m X-ray telescope and the large-area modular array, as well as individual experiments, such as ultra-soft X-ray telescopes, X-ray spectrometers, and gamma-ray-burst detectors.

OPTICAL AND INFRARED ASTRONOMY

The research in the Optical and Infrared Division underwent significant changes during this year. The Division began new programs of extragalactic observations centered on the study of the distribution and dynamics of individual and groups of galaxies. These programs are expected to expand in the future with the development of new instruments and the Multiple Mirror Telescope (MMT).

Research in infrared astronomy is also expected to expand following NASA's announcement that a Smithsonian-directed telescope project had been approved as an experiment on Spacelab II, which is scheduled for flight aboard the Space Shuttle in 1981. The small helium-cooled telescope will be operated in cooperation with the Marshall Space Flight Center and the University of Arizona.

The telescope will make the first complete map of extended regions of low-level infrared emission from the entire Milky Way. The experiment will also observe the zodiacal emission in the solar system and make the first all-sky survey of the extended infrared emission from intergalactic matter, distant galaxies, and quasi-stellar objects.

During the spring of 1977, the ninth and tenth flights of the 102-cm balloon-borne far-infrared telescope took place under the

sponsorship of NASA. The April 26 flight was very successful, yielding 7.7 hours of observation with the broad-band (40–250 micron) photometer of the planets Venus, Saturn, Uranus, and Neptune; the supernovae remnants Crab Nebula and Cas A; the asteroid Ceres; the H II regions W42 and RCW 126; and the molecular cloud M17 SW. The data from this flight are currently being reduced. The pointing stability of the telescope was the best ever achieved during flight. The June 2 flight was aborted when the balloon burst just as it approached float altitude. This flight was equipped to use a four-color photometer built by the University of Palermo. The telescope was recovered in excellent condition.

Data reduction continued on the 1975 and 1976 balloon flights. Six of the ten flights have produced useful astronomical data, resulting in a total observing time of more than forty hours. Results on the H II regions M20, M8, and W31 have led to a better understanding of dust and gas distribution in these regions, by the identification of previously unresolved complex sources and the determination of the total luminosity of the sources in these clouds. A strong, compact far-infrared source has been identified near W31, coincident with a compact H II region and with OH and H₂O masers, giving new insight into the role of these objects in the evolution of massive protostars. In the M8 region, a new far-infrared source was discovered that was later associated with an extensive molecular cloud.

Construction of the joint Smithsonian–University of Arizona Multiple Mirror Telescope (MMT) has progressed to the point where the dedication can be tentatively scheduled for the fall of 1978. All scheduled SAO tasks on the MMT were completed. During this year, the optical systems were completed by the University. The telescope mount was constructed and all major components installed. The steel frame of the telescope housing was erected on the site at the summit of Mount Hopkins, Arizona, and its floors and the outer metal siding also were installed.

The division has embarked on a vigorous program of instrument development, including a CCD camera and an InSb infrared detector array. These and other instruments, used on various telescopes, will give center scientists a capability for astronomical research as good as is available anywhere in the world. Another aspect of the improved observational capability is the development

of a new style—remote observing—in which research scientists can arrange to obtain high-quality astronomical data without their presence at the telescope. This technique has been successfully implemented in the echelles spectroscopy program at Mount Hopkins.

PLANETARY SCIENCES

The work of the Planetary Science Division ranges across a wide variety of solar system objects, excluding the Sun and emphasizing smaller bodies.

Theoretical studies on the origin and early history of the solar system continued, concentrating on the determination of the properties of giant gaseous protoplanets and on the development of the impact theory of lunar origin.

A program of redetermining the orbits of old single-apparition comets in order to acquire uniform and definitive information about the structure of the Oort cloud was essentially completed. The determination of orbits and the checking of observations of comets and minor planets were done in connection with various astrometric programs, notably the one at the Agassiz Station in which over 400 observations of 20 comets and 150 minor planets were obtained. Instrumentation is under construction for a new program to determine asteroid diameters by lunar occultations.

The division continued its responsibility for operating the IAU Central Telegram Bureau, which issued some 120 IAU *Circulars* during the fiscal year. The Bureau Director also made predictions of various planetary occultations, including a detailed analysis of the structure of the recently discovered Uranian rings.

Division members directed the activities of the Imbrium Consortium, a group of lunar scientists from several institutions, which is collaborating on the study of a suite of particularly informative breccia samples from the highlands of the Moon. Petrologic studies of the lunar samples addressed by the Imbrium Consortium were completed and a crustal model for the Moon was developed, based on the properties and distribution of samples collected by the Apollo missions.

Other petrologic studies of lunar samples focused mainly on two problems: the source of exceptionally Ti-rich particles in the Apollo 12 soils, and the analysis of materials from seven levels in the core recently returned from Mare Crisium by the USSR's Luna 24

space probe. The dominant rock type in the Crisium samples is a variety of ferrobasalt, very poor in TiO_2 and MgO , unlike any previously recognized on the Moon.

Work on neutrinos conducted with special detectors placed in deep mines has shown the ^{37}Ar production rate at an 1100-foot depth is 4 times higher than theoretically estimated. This experimental result, if extrapolated to the 4850-foot depth, requires that the previous solar neutrino value of 1.5 SNU be reduced by a factor of 2—thus making the solar neutrino puzzle even more puzzling. The present limit of the ^{37}Ar production rate at 4850-foot depth gives a lower limit of 2.2×10^{26} years for the lifetime of baryons (protons and neutrons).

RADIO ASTRONOMY

The Radio Astronomy Division's objectives concentrate on microwave atomic and molecular spectroscopy of the interstellar medium and the Earth's atmosphere. Laboratory and theoretical research supplements the interpretation of observations made with ground-based radio telescopes.

Multiple molecular mapping of dense interstellar gas and dust regions continued with a view toward understanding the information and evolution of massive stars as well as physical conditions within the nebulae.

By use of antennas with intercontinental separations, very long-baseline interferometry (VLBI) investigations of interstellar masers revealed a number of new H_2O maser sources in directions toward the galactic center.

A new 18-cm radiometric system was added to the VLBI equipment at the Harvard Radio Astronomy Station in Fort Davis, Texas. The instrumentation should increase the station's participation in network VLBI research on interstellar OH masers; initial experiments have been successful. Continuous observations were maintained at this site to monitor the radio behavior of the Sun. Planning was completed to expand this research during the forthcoming solar maximum period.

VLBI observations of variable extragalactic sources were also continued at the Harvard Station in cooperation with other radio observatories. Plans are now being made to extend this work, to acquire new VLBI equipment, and to upgrade the 85-foot antenna at the station.

Interstellar maser studies, together with millimeter-wave molecular observations of SiO in the direction of long-period variable stars, provided a solution for determining the true radial velocity of the long-period variable.

A new millimeter-wave atmospheric molecular spectrometer was completed and made successful observations of ozone and carbon monoxide. A mathematical model was developed to obtain the molecular altitude distribution from the spectrometer observations. Laboratory measurements of pressure broadening, including temperature dependence for carbon monoxide and ozone, were begun.

Design, construction, and testing of a 384-channel filter bank was completed to improve millimeter-wave observations of interstellar molecules.

SOLAR AND STELLAR PHYSICS

The principle activities of the Solar and Stellar Physics Division focus on the Sun as it relates to the solar-terrestrial environment, to other stars, and to astrophysical processes.

Analysis of extreme ultraviolet and X-ray solar data from the Skylab experiment continued. Efforts were concentrated in active regions and flares, in connection with NASA's year-long Flare Workshop. Considerable progress was made in determining mass motions in flares and flare loops, and in determining the energy released in different levels of the atmosphere during flares. In addition, observational and theoretical studies have shown that the heating of magnetically confined structures in the corona (and perhaps heating of the entire corona) may well be produced by *in situ* dissipation of electric currents, rather than by shock waves as is commonly supposed.

Development of an extreme-ultraviolet spectrometer for the Solar Maximum Mission, being readied by Harvard scientists for launch in 1979, continued as did development of an ultraviolet coronagraph for rocket observations of Lyman alpha emission from the solar corona.

Theoretical and observational solar and solar-terrestrial research was conducted as part of Smithsonian's new Langley-Abbott Program of solar research. Work included measuring the relative rate of rotation of photospheric magnetic fields and plasma with the inference that strong field concentrations are magnetically tied to a

more rapidly rotating subsurface field structure. The present constancy of the solar visual luminosity was established to the 0.3 percent level. The long-term sunspot rotation rate was examined in relation to overall magnetic activity.

Observational studies of chromospheres and coronas of other stars progressed mainly by use of data from the Copernicus satellite. Concurrently, work continued on modeling solar and stellar chromospheres and predicting the emergent spectrum for comparison with Copernicus, ATM, and other space and ground observations.

Studies of the scientific parameters and detailed instrument design for a faint object spectrograph for the Space Telescope were conducted to obtain spatially resolved spectra of galactic and extragalactic objects.

THEORETICAL ASTROPHYSICS

The Theoretical Astrophysics Division carries out research on a diverse range of astrophysical phenomena, with theoretical studies often applied to the support and interpretation of observational data. Division members frequently work in collaboration with members of other divisions as well as with scientists in other institutions. In addition, they contribute significantly to the educational programs of the Observatory.

By an association of theoretical and observational studies substantial progress was made in the understanding of molecular clouds and star formation. An interesting suggestion was made that interstellar graphite particles originate in carbon-rich planetary nebulae with the consequence that the abundance of ^{13}C in the interstellar gas should be 1/40 that of ^{12}C .

Studies of stellar evolution advanced and significant research was accomplished in basic aspects of gravitational theory, of fluid mechanics and kinetic theory, and of quantum mechanics.

Detailed modeling of planetary atmospheres and interstellar clouds provided new insight into their physics and chemistry and led to quantitative measures of the ionizing radiation to which they are subjected.

Smithsonian Tropical Research Institute

For the last twenty years the Smithsonian Tropical Research Institute (STRI) had placed a high priority on the goal of building up a resident staff of experts in various aspects of tropical biology. A great variety of problems concerning the adaptations of life to the tropics can best be approached by long-term, *in situ*, studies which cannot be conveniently accomplished by scientists on summer leave from temperate zone universities.

During fiscal year 1977, scientific visitors using the marine and terrestrial facilities at STRI represented seventy-nine universities from thirty-one countries and thirty states including the District of Columbia and Puerto Rico. These scientists published over one hundred papers in international journals. Many university scientists are conducting their research on the isthmus with financial support from the National Science Foundation and the National Institutes of Health in the United States and the National Research Council in Canada.

Professor George Bartholomew from the University of California at Los Angeles (UCLA) has been making annual trips to Barro Colorado Island in recent years to examine the energetics of heterothermic insects. Professors Gorman and Rosenblatt from UCLA and the University of California in San Diego, respectively, are studying the biochemical genetics of Panamanian fishes.

Professor Arnold Kluge from the University of Michigan is examining the reproductive strategies of tropical hylid frogs. Professors Jane Lubchenco and Bruce Menge from Oregon State University are looking at the role of predators in the diversity of intertidal tropical organisms—an attempt to quantify events in a high-energy, high-diversity zone of the ocean. Professor Roy Caldwell of the University of California at Berkeley is examining the behavior of stomatopods and comparing his Panamanian results to his previous observations of this group in the Indo Pacific. Professor Gordon Moodie, who is taking his sabbatical year here from the University of Winnipeg, is studying comparative diversity patterns of fresh-water fishes from the temperate and tropical regions. Drs. Patricia Brown and Alan Grinnell from the University of California at Los Angeles are examining the ontogenetic changes in behavior,

neurophysiology and neuroanatomy in developing young of the moustache bat *Pteronotus parnelli*.

Since a considerable part of the research effort, particularly on Barro Colorado Island, is conducted by visiting scientists and students, the work being performed is often not a uniform or random selection of the scientific disciplines available for study. Last year, plant ecologists were the dominant scientific group. This year mammalogists appear to dominate, although they spread their attention over a variety of the 97 species of mammals that inhabit Barro Colorado Island.

Katharine Milton, supported by a Smithsonian postdoctoral fellowship, continues her observations of howler monkeys that were the subject of her doctoral dissertation. She is interested in the ecological and physiological correlates of the animals' diets, and has been studying the energetics and metabolic rates of both free-ranging and captive monkeys. In April, 25 helpers were marshalled in an extensive effort to census the howler monkey populations of the island. This census revealed a total of 65 howler monkey troops which ranged in size from 9 to 32 individuals, with an average of 20, giving a total population of approximately 1,300 animals.

Howler monkeys were also the object of study of Christina Dubov, a STRI short-term fellow, who studied intraspecific variation in feeding patterns. Jeff Otis conducted further observations in connection with a long-term study of Jeff Froelich of the University of New Mexico, and Richard Thorington of the National Museum of Natural History, on the micro-population genetics of howlers. They are attempting to discover whether genetic differences exist between individual howler monkey troops by measuring small differences such as the structure of their dentation and hand prints.

Roy Fontaine from the University of Georgia is testing predictions derived from morphological studies of the positions monkeys assume when they are free in their natural habitat. He believes that differences in the pelvic and shoulder girdles and long-bones reflect ecological differences in the feeding sites of howler, spider, and white-faced monkeys.

All this attention to howler monkeys serves a particularly important practical function in addition to the fundamental biological data derived from them. Howler monkeys are particularly susceptible to yellow fever, and the large population of this species acts

as a sentinel to the periodic northward spread of this disease out of the Darien forests.

Regarding the non-primates, James Russell of the University of North Carolina, supported by a National Science Foundation Doctoral Dissertation Grant, is in the middle of a two and one-half year study of the social dynamics of coatimundi groups. He has marked fifty individual animals by freeze-branding and has attached radio transmitters to members of three different bands. He is thus able to relocate a band by their radio signals and to observe the behavior of individuals. He is particularly interested in the degree to which females in the groups interact with juveniles, and has found that a considerable amount of care may be expended on young animals to which they are not necessarily closely related. Deedra McClearn, a Harvard graduate student, was able to use these same habituated and radio-marked coatimundis in her observations of locomotive patterns.

William Glanz, a Smithsonian postdoctoral fellow, is studying patterns of habitat use among tropical mammals, particularly arboreal rodents. Using the recently completed (42-meter) tower in the forest at the Lutz watershed, he has been able to observe eighteen species of mammals; eleven of these, particularly difficult to observe, were nocturnal species.

Gene Montgomery and Yael Lubin have been studying the ecology and behavior of anteaters. They have recently been concentrating their work on the tiny, nocturnal, arboreal silky anteater *Cyclopes didactyla*, about which almost nothing is known. This animal is very seldom seen, but they have been fortunate in being able to take advantage of the extraordinary observational abilities of Bonifacio DeLeon, a technician with the Environmental Sciences Program. He has found fifteen silky anteaters and these have been fitted with small radio transmitters. The ability to relocate the anteaters has produced a variety of new data. The silky anteaters feed exclusively on small ants (up to 6,000 a day) which they extract with a long sticky tongue after splitting open small twigs and vines with their claws. Females have one offspring at a time which remains with them for at least three months. Each night the mother leaves her young and goes out to forage on her own. In the morning, she returns, picks up her baby and moves to a new sleeping place. Silky anteaters are essentially solitary animals. The females

have non-overlapping home ranges, and the males have a home range that may include several females. The home ranges are relatively large for a small (about 200 gm) mammal, and this may be due to the dispersed nature of the food supply.

Charles Handley and his colleagues from the National Museum of Natural History have continued their study of the population dynamics of bats, particularly of the fruit bat *Artibeus jamaicensis*. With mist nets they have caught and marked nearly 3,000 bats belonging to 39 of the 46 species known to exist on Barro Colorado.

A study of frugivorous mammals, the agouti and paca, was begun by Nicholas Smythe in 1971. Almost 200 animals have been caught, marked and released, providing much data on the breeding patterns, mortality, and use of space by these animals.

Our knowledge of the population dynamics of tropical wild mammals is extremely scant. Even fundamental facts such as the average life span are not known for any free-living neotropical mammals. Studies to determine such data are only possible at established scientific reserves such as Barro Colorado Island, where a researcher can be reasonably confident that he can initiate long-term observations or experiments on natural populations without fear of human interference with the habitat or the animals.

The Environmental Sciences Program continues in its task of monitoring long-term change in tropical ecosystems on Barro Colorado and at the Galeta Point Marine Laboratory. The analysis and display of data obtained by this program, long subject to considerable delay because of its sheer volume, is now being expedited by a mini-computer. An example of the product of this system is illustrated by the tree phenology data. Over 33,000 individual observations of tree phenology taken over a period of 80 weeks were read and analyzed in a single day. The series of bar graphs on leafing behavior well illustrates the dramatic seasonal difference in the availability of young leaves, which is the preferred food of practically all leaf-eating animals. These seasonal differences are thought to underlie many of the fluctuations in animal abundance and behavior which are being investigated on Barro Colorado.

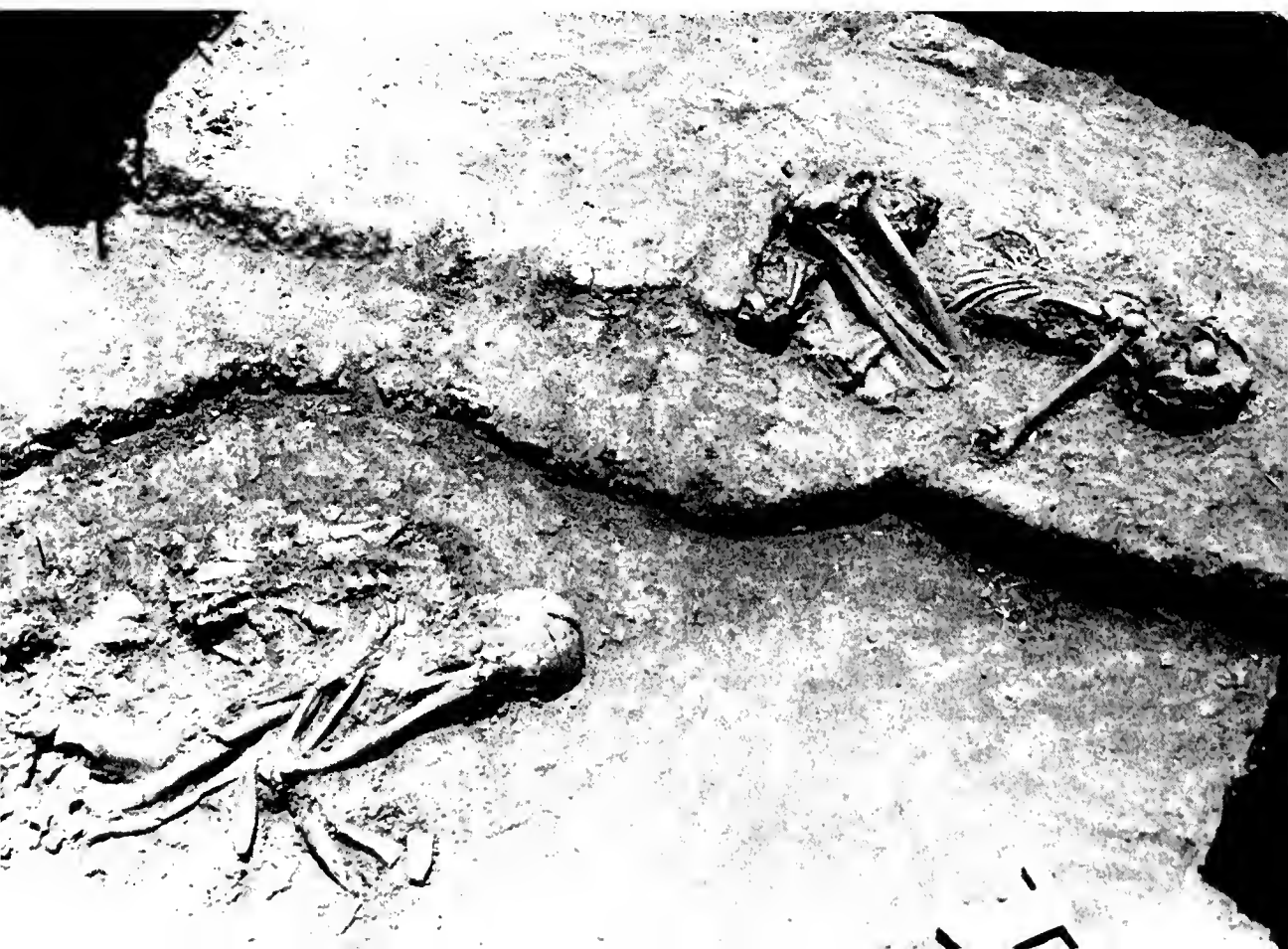
Barro Colorado remains a principal focus for much of the research performed by the STRI staff and visitors; however, a continuous and increasing effort is being devoted to other areas in both the New and Old World Tropics.



Silky anteater—the smallest and least frequently seen of the neotropical anteaters is being radio tracked on Barro Colorado Island by Smithsonian Tropical Research Institute scientists.



This 42 m tower in the Lutz Watershed on Barro Colorado Island permits observations of the forest canopy and a platform for solar radiation measurements. Its operation is supervised by the Smithsonian Tropical Research Institute's Environmental Sciences Program. *Below:* Salvage archeology excavations of a cemetery (300 B.C. to A.D. 1) in Cocle, Panama, are under the auspices of Smithsonian Tropical Research Institute scientists. The individual in the foreground was an axe-maker or woodworker and was buried with the earliest dated sample of corn (*Zea mays*) from Central Panama.



Alan Smith has pursued his studies of plant ecology in the Venezuela páramo and the alpine region on Mount Wilhelm in Papua, New Guinea. This year, he began a three-year study of the alpine zone of Mount Kenya as well as continuing a genetic analysis of the variegated and plain phenotypes of *Byttneria aculeata* on Barro Colorado. The study of *Espeletia* in Venezuela has produced the unexpected observation that these plants become larger as elevation increases, the opposite of the normal trend in alpine regions. Apparently, with increasing altitude, there is a reduction in both interspecific and intraspecific competition, lowering adult mortality and allowing older and consequently taller plants to survive.

Olga Linares returned to West Africa to complete her studies, begun in 1961, of the ecology and social organization of the Diola peoples of southern Senegal. She has concentrated on questions of what aspects of the Diola agro-ecosystems help maintain the egalitarian fabric of their society; what is the relationship between large irrigation work and the lack of Diola social stratification; and how wet-rice cultivation adapts to different ecological conditions. Her studies indicate that political decentralization, shallow lineages, territoriality-based kin units, and wide-ranging filiation with uterine kin lend flexibility to Diola wet-rice cultivation. That this flexibility is ecologically advantageous is demonstrated by the fact that the Diola were the only Senegalese group able to feed itself without government assistance during the early 1970s drought.

Work on the behavior and evolution of wasps continues in the Colombian Andes. M. J. West Eberhard is examining *Microstigmus* a genus of tiny wasps about the size of mosquitos. More than fifty species are known, many of which are endemic to small isolated cloud forests on the sides of mountains. Their study is producing information on the process of species formation in the tropics and the nature of primitive social organization. This work is particularly urgent, since the montane forest habitats are in danger of disappearing due to human activities. She is also collaborating with medical researchers on methods of desensitizing patients allergic to wasp venoms.

Martin Moynihan began a long-term behavioral study of tropical birds of the order Coraciiformes. This ecologically important group includes the hornbills, rollers, kingfishers, hoopoes, and wood-hoopoes in Senegal, the Ivory Coast, and Gabon. Many of the

species have remarkably unequal sex ratios and other peculiar intra and interspecific social organizations.

Studies on coral reefs in the eastern Pacific have revealed a variety of interactions between the corals and their associated invertebrate fauna. Some of these organisms confer a degree of protection to their coral hosts by warding off predators, whereas others are clearly destructive to coral growth and interfere with long-term reef accretion.

In the first category is the symbiotic relationship between crabs of the genus *Trapezia* and the snapping shrimp *Alpheus*, which live as obligate commensals on a branching coral *Pocillopora*. Laboratory studies conducted by Peter Glynn have shown that the coral without the crabs and shrimps, is a favored food item of *Acanthaster*, the infamous Crown-of-Thorns seastar. However, if the commensals are present on the branching coral, as is usually the case on healthy reefs, a Crown-of-Thorns attempting to feed on the coral is vigorously bitten and snapped at until it moves away. Another invertebrate that protects corals is the Painted Shrimp (*Hymenocera*). The Painted Shrimp attacks the Crown-of-Thorns seastar, driving it way from the coral or riding on it until it eventually kills the much larger seastar.

In other studies, Glynn found that a small molluscan gastropod (*Jenneria*) with a voracious appetite for coral, can kill up to 5 percent of the standing crop of coral on a reef every year. Recent studies in the Galápagos archipelago have disclosed that the slate-pencil sea urchin *Eucidaris* is also capable of prodigious destruction of live corals. These studies indicate that reef corals in the Galápagos Islands, long suspected of being limited by cool waters, must also contend with significant attrition due to an abundant invertebrate browser.

Last year saw an increased use of the San Blas Islands on the north coast of Panama by biologists studying aspects of fish behavior, from the intra and interspecific competition of diurnal fishes for sleeping sites by D. Ross Robertson, to continued studies of sequential and simultaneous hermaphroditism in a variety of species by Steve Hoffman and Eric Fischer.

Political and economic events such as the completion of negotiations of a new canal treaty between Panama and the United States and the requirement to transport Alaskan oil to Gulf Coast refineries have interacted to reactivate the idea of building a sea-

level canal. In August, Peter Glynn and Ira Rubinoff were appointed to a National Research Council Committee with the responsibility of updating the National Academy's 1970 report on the "Ecological Consequences of a Sea-Level Canal."

Our marine program has grown significantly since 1970, and STRI will be in a better position to participate significantly in new canal studies, should they develop.

On January 5, 1977, a contract was signed by the Minister of Health of the Republic of Panama and the Director of STRI, authorizing STRI to pursue its research and conservation interests throughout the Isthmus of Panama. This contract also authorizes the establishment of field stations whenever they may be of particular research interest.

Dr. Pedro Galindo retired in 1976 as Director of the Gorgas Memorial Laboratory and joined STRI as a part-time consultant to help in developing the establishment of wildlife sanctuaries in the Republic of Panama.

Rapidly developed interest in tropical ecology was illustrated by the success of the IV International Symposium of Tropical Ecology held in Panama, March 7-11, 1977. STRI co-sponsored this symposium with several Panamanian organizations, and over 400 scientists representing 36 countries attended.

A number of improvements to STRI physical plants were completed this fiscal year. The ancient wooden launches serving Barro Colorado Island were retired and replaced by two 40-foot fiberglass boats obtained surplus from the Navy. Rechristened *Megalops* and *Brycon*, they are providing speedier service to the island. Without the worry of dry rot they should represent a considerable reduction in maintenance time and expenses. A dial telephone system has been installed on the island, greatly facilitating communications and the ability to react to island emergencies.

The final phase of the Tivoli Administration/Laboratory building has been completed and a move is planned later this year.

In 1977, short-term fellowships financed by the Exxon Corporation, the Noble Foundation, and the Henry B. and Grace Doherty Foundation supported twenty-eight fellowships and assistantships. The assistantship program was initiated in 1977 to provide tropical experience to promising young students who had not yet developed sufficient background to initiate independent research projects.



Alexander Calder (1898–1976), America's best known sculptor, is well represented by documentation in the Archives of American Art.

HISTORY AND ART

Archives of American Art

As the Smithsonian's repository for original source material on the visual arts in America, the Archives of American Art continued its pursuit of individual and institutional records reflecting the history of painting and sculpture in the United States. Through its five regional centers and interlibrary loan arrangements, it makes the documentation it assembles available to scholars on a national basis.

The personal and professional papers of artists represent the majority of collections acquired by the Archives, but an unusual amount of rich material from curators, collectors, dealers, and critics was received during the past year. Two groups of gallery records worthy of note are a collection of letters written to the New York dealer Curt Valentin by, among others, Alexander Calder, Lyonel Feininger, Henry Moore, and David Smith; and business records of Doll and Richards, a Boston firm that has handled the work of American artists since the late nineteenth century. The papers of Katharine Kuh, reflecting her career as curator and critic as well as dealer, include correspondence with such leading figures as Joseph Albers, Alfred Barr, Naum Gabo, Hans Hofmann, and Mark Tobey. William Milliken's papers cover his position as Director of the Cleveland Museum of Art for more than thirty years and contain information about that museum as well as the professional organizations he served as president. The correspondence of William M. Ivins, Curator of Prints at the Metropolitan Museum of Art from 1916 to the 1940s, includes a long series of letters from Bernard Berenson.

Edwin Shaw, an Akron, Ohio, collector of American art in the late nineteenth and early twentieth centuries, corresponded with

George Inness, Frank Duveneck, William Merritt Chase, and other major painters of the period. The extensive research material gathered by art historian Alfred Frankenstein for his books on American still-life painting and on William S. Mount was also turned over to the Archives.

Among significant artists' papers received in 1977 were those of the painters Fairfield Porter, Paul Sample, Allyn Cox, Karl Knaths, and Harold C. Davies; diaries kept by Max Beckman; and correspondence, notes, and other records of the sculptors Chaim Gross, Walker Hancock, Robert Laurent, Richard Lippold, and John Storrs.

Three collections in particular throw light on aspects of government involvement in the arts under the New Deal. The records of the Early American Portrait Survey for the Northeastern United States, a cataloguing project conducted under the Work Projects Administration (WPA), were lent for microfilming. Some newly donated Ben Shahn papers provide thorough documentation on his mural painted for the Society Security (now HEW) Building in 1942. The papers of Chicago sculptor Milton Horn offer both manuscript and painted material from the modernists' side of a sharp controversy over the design for the Jefferson Memorial.

The Archives Oral History Program has since 1958 been conducting and acquiring tape-recorded interviews with artists and others involved in the arts. This useful method of documentation from the source was expanded in 1977 with fifty-six interviews, the majority of them held in the Midwest and New England. The reminiscences and observations of Philip Adams, retired Director of the Cincinnati Art Museum, of Joseph Butler III, Director of the Butler Institute of American Art in Youngstown, Ohio, of Joseph H. Hirshhorn, collector and art patron, and of Robert Graham of the Graham Gallery in New York are particularly valuable.

The use of microfilm enables the Archives to duplicate its holdings for each of its regional offices. Films of 112 collections of papers were made and distributed in 1977, together with more than 2,000 catalogue cards describing and indexing their contents.

Scholarly use of the Archives continues to grow. Over 2,300 research visits from graduate students, curators, faculty members, and independent scholars were made to all Archives offices during the course of the year, and 1,085 rolls of film, a 50 percent increase over the number for 1976, were sent out through interlibrary loans

to researchers throughout the country. Books, articles, dissertations, and exhibition catalogues are the end product of this activity. Among those depending on Archives resources published during the year were a catalogue raisonné of the works of David Smith; a survey of highlights of American painting and sculpture since 1776; a large volume on Alexander Calder; major exhibition catalogues on California art, Daniel Chester French, New Deal painting, and the Collection of the Rhode Island School of Design; and articles on Henry Inman, Maurice Prendergast, and collector Thomas B. Clarke.

In an effort to reach out to the general as well as the scholarly public, the Archives organized and participated in several exhibitions in 1977. "Artists and Writers in America," held in the gallery made available to the Archives by the National Portrait Gallery, presented letters, sketches, and photographs reflecting relationships between the art and literary worlds over the past century. "Artists and their Studios," a display of photographs of painters and sculptors at work, traveled to Detroit, Minneapolis, and Portland Oregon, under the auspices of the Smithsonian National Associates' Program. Documents from the Archives were shown in connection with fifteen exhibitions of American art in museums in New York, Baltimore, Los Angeles, San Francisco, Boston, and other cities. Members of the Archives staff delivered twenty-five lectures and participated in six symposia concerned with American art and with the archival profession.

The Archives continued to publish its quarterly *Journal*, a magazine devoted to articles based on Archives resources and information on recent acquisitions. A new edition of the *Checklist of the Collection*, a comprehensive listing of Archives holdings, was prepared during the year for publication in 1978.

Cooper-Hewitt Museum of Design and Decorative Arts

The Cooper-Hewitt Museum reopened to the public on October 7, 1976, to rave reviews by the press. Visitors lined up around the block to attend the opening exhibition, "MAN transFORMS," and

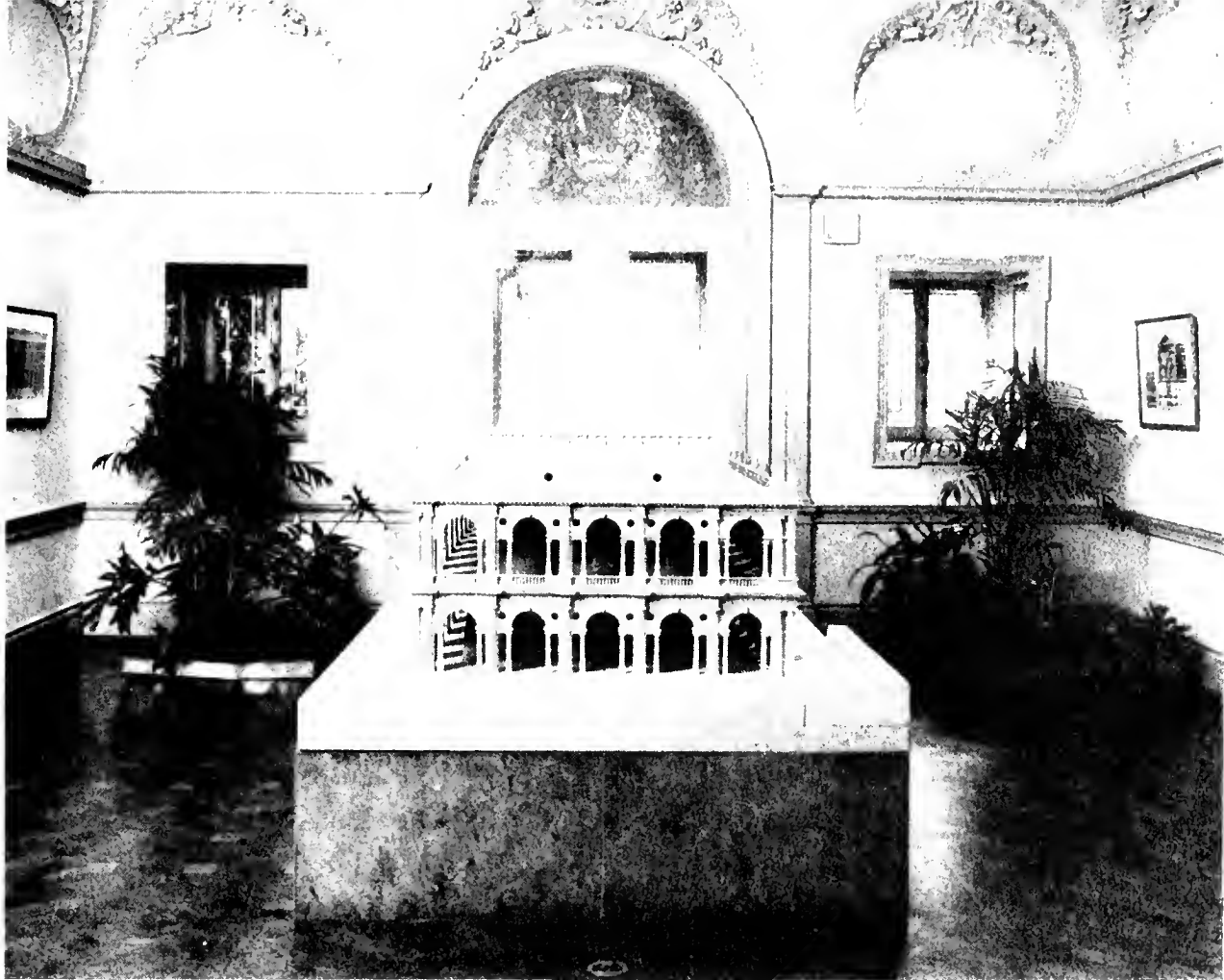
during the first few months the Museum's attendance was more than 5,000 per week. This exploration of the design process through the ages and in different cultures closed in February and was followed by "The Royal Pavilion at Brighton," an exhibition honoring the Silver Jubilee of Queen Elizabeth II. Objects from the Cooper-Hewitt, the Royal Pavilion, and nine items especially chosen by the Queen were included in this exhibition, which also received great acclaim and is now beginning a two-year tour of the United States.

Two architectural exhibitions, "Andrea Palladio" and "200 Years of American Architectural Drawing," followed. Because of extensive coverage of these exhibitions in the design, architecture, and general press, the Museum was able to sustain the visitor count begun with the opening exhibition, so that at the end of the first year a total of 250,000 visitors was recorded. There is every reason to believe that this number of visitors can be maintained and increased as the popularity of the Museum grows.

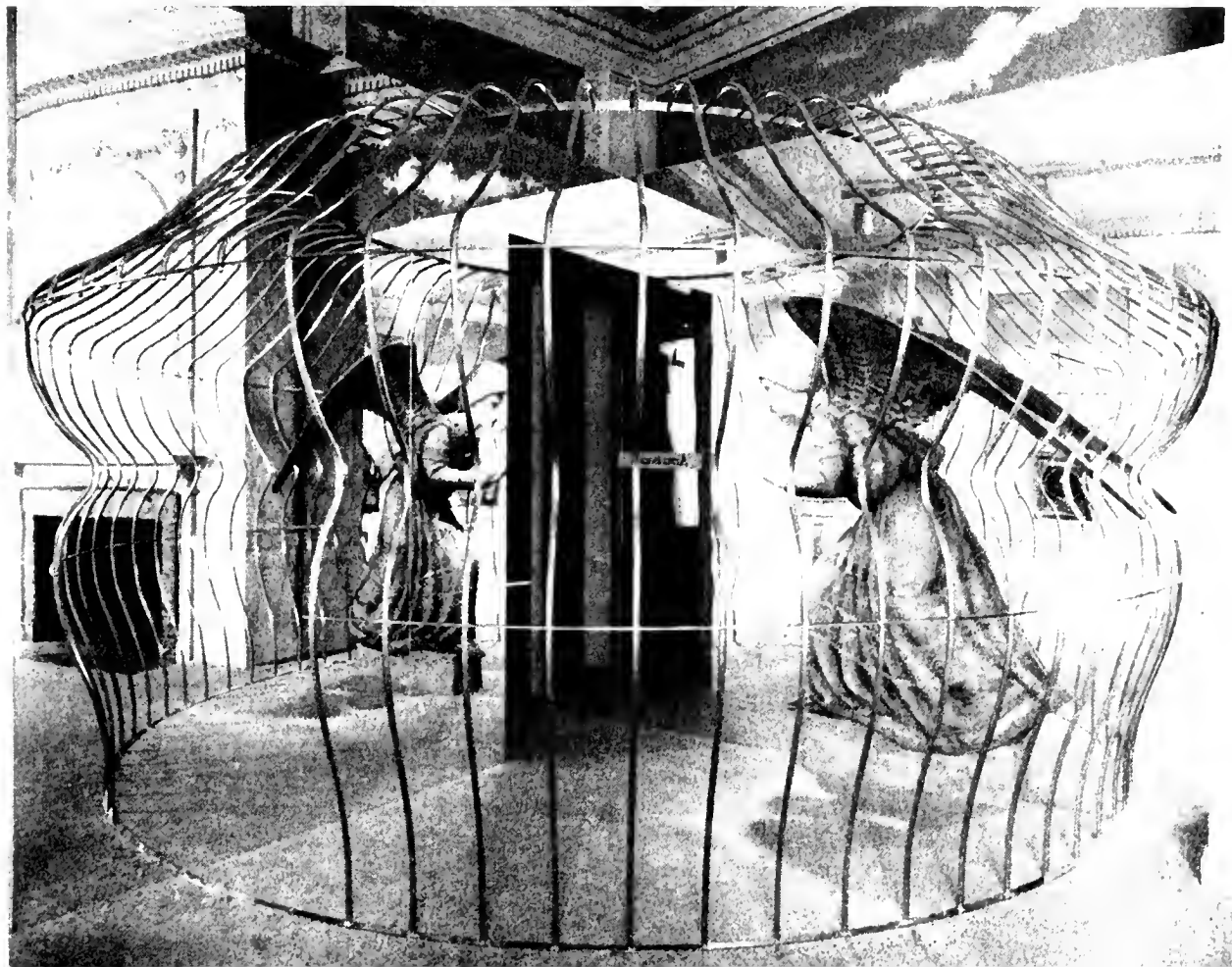
Five exhibitions were held in the Contemporary Design Gallery: "Drawings of 19th Century Berlin," "The Carnegie Mansion," "Henry Mercer," "Palaces for the People," and "Drawing Toward a More Modern Architecture." These were responsive to particular interests of the Museum and explored different facets of the design field.

A membership program was begun in October 1976 with an appeal to the greater New York metropolitan area. More than 4,000 members have enrolled, an extraordinary achievement considering that the Cooper-Hewitt was then virtually unknown to the public. A series of educational programs coinciding with the opening have reflected the special interests of the Museum—design, architecture, decorative arts. There were more than ninety programs, including tours to underground New York; homes in the Hamptons, Olana, and Williamsburg; weekend seminars on the age of Louis XVI; craft workshops on quilting and bookbinding; lectures on American decorative arts, carpets and silver; luncheon talks on interior design and antiques; and children's classes for ages three to twelve. More than 3,000 people participated in these events.

The volunteer and internship program became more important than ever before. One hundred volunteers are now assisting the Museum's curators, librarian, registrar, information desk, and pub-



A view of the Loggias of the Palazzo Della Ragione, a model prepared by Ballico Pietro, and part of the Cooper-Hewitt Museum of Design and Decorative Arts' exhibition of the works of Andrea Palladio. *Below:* Angel cage in Bird Room, a contribution of Arata Isozaki to the Cooper-Hewitt Museum's exhibition "MAN transFORMS, Aspects of Design," which celebrated the reopening of the Museum on October 7, 1976.



lic affairs office in a variety of tasks. Trained docents take visitors on special tours of the building and the exhibitions. Interns have been assigned to individual curators and work on projects for which they receive credit at their institutions.

An important project is under way with the Book-of-the-Month Club, which will print a twelve-part series, *Smithsonian Illustrated Library of Antiques*, to be offered to its members and to the Smithsonian Associates. The first volume will appear in the winter of 1979.

During the year, the drawings and prints collection was installed in the Drue Heinz Study Center and the library in the Doris and Henry Dreyfuss Memorial Study Center. A textile conservation laboratory was established thanks to the Samuel Kress Foundation, and a special storage center for the Museum's ceramics collection was created. One hundred and ten individuals have donated 612 objects to the Museum's collections, responding to special appeals from the different departments.

The Museum looks forward to continued growth and to the opportunity of enriching the cultural life of New York and the nation with its public programs and activities, its remarkable collections that only now are being made accessible to the visitor, its exhibitions, and its scholarship.

Freer Gallery of Art

Dr. Harold P. Stern, Director of the Freer Gallery of Art since 1971, died after a long illness on April 3, 1977. His premature death at the age of fifty-four is a serious loss to specialists in the field of Oriental art as well as to the Gallery. Dr. Stern's entire professional career was spent at the Freer Gallery of Art. He came to the Gallery as a graduate student from the University of Michigan in 1949. Appointed to the curatorial staff of the Gallery in 1950, he became Assistant Director in 1962. Dr. Stern was an internationally recognized scholar in the field of Japanese art. His wit and erudition are embodied in his publications, just as his many contributions to the Freer Gallery of Art are an indelible part of the history of that institution.



Japanese wood sculpture; Kamakura period, 1185–1333; Komokuten (one of the set of four Shitenno). Height is 26 inches; width at base is 13 inches. Freer Gallery of Art, 76.12.

歲云暮矣。風雨淒
然。紙窗。林屋。燈火
青熒。時於此中。得
少佳趣。

東坡語為

臥道人書

王時敏



Chinese calligraphy; Ch'ing dynasty, 1644–1912; Wang Shih-min (1592–1680); panel; ink on paper. Its height is 28½ inches; width 19⅞ inches. Freer Gallery of Art, 77.1.

While Director of the Freer Gallery of Art, Dr. Stern was responsible for the acquisition of a number of important objects for the collection. Some of his favorite Japanese objects, all of which were acquired during his tenure as Director, were displayed in a memorial exhibition held at the Gallery throughout the summer. The Harold P. Stern Memorial Fund has been established to further Dr. Stern's lifelong interest in Japanese art. Income from the Memorial Fund will be used to increase the understanding and appreciation of Japanese art through lectures, symposia, and publications; teaching activities; conservation training and apprenticeship programs; and the acquisition of Japanese art of the highest quality.

Several special exhibitions were held at the Freer Gallery of Art during the past year, all of them designed to highlight relatively unexplored areas of the collections. A select showing of Japanese objects was included in "Shinto Art." Long considered too esoteric a subject for Western audiences, the carved and painted images of tutelary deities proved to have great appeal for Gallery visitors. Most of the Freer's major American paintings were included in a large exhibition entitled "A Connoisseur's Vision: Selections from Charles Lang Freer's American Art Collection." Many of the American paintings included in the exhibition were newly cleaned, and a number of the original frames were refurbished before being shown. The emphasis upon American artists who were patronized by Charles Lang Freer reflects a growing scholarly interest in this comparatively unstudied period of American cultural history.

Oriental calligraphy has never enjoyed the same prestige in the West that it has traditionally received in the Far East, but the success of the Gallery's "Oriental Calligraphy" exhibition clearly indicated increasing Western awareness of the importance of calligraphy for an understanding of Far Eastern cultures. Rubbings of ancient Chinese calligraphic monuments, shown for the first time, were especially noteworthy highlights of this exhibition.

The fall season of 1977 was highlighted by two exhibitions. "The Four Seasons in Japanese Art," which occupied four separate galleries, presented a selection of handscrolls, hanging scrolls,

screens, and larger artifacts. All of the objects illustrated the theme of birds, flowers, and animals of the four seasons. Original planning was begun by Dr. Stern, and the opening date was scheduled to coincide with a loan exhibition entitled "Birds, Bees, Blossoms and Bugs," which he had organized for the Asia Society in New York City. Unexpectedly, the exhibition at the Freer and the one at the Asia Society became memorial exhibitions for Dr. Stern. A slightly smaller exhibition, "Chinese Album Leaves and Fan Paintings," provided unusual insights into Chinese painting of relatively small scale. In spite of their size, however, the fan paintings and album leaves provided exciting glimpses into traditional Chinese representations of landscapes, figures, birds, and flowers.

Academic appointments to the Freer were Richard Edwards and Calvin French, University of Michigan professors, who are serving as honorary associates.

For the twenty-fourth season, the Gallery offered a series of illustrated lectures on Oriental Art. The November lecture, sponsored jointly by the Freer Gallery of Art and the Embassy of Japan, was given by Robert Moes of the Brooklyn Museum. Mr. Moes spoke on "Important Developments in the History of Japanese Ceramics." In March the Rutherford J. Gettens Memorial Lecture was delivered by Professor Kazuo Yamasaki. The topic of his lecture, "The History of Japanese Paintings as Seen from Pigment Studies," provided new insights into an area of research that has special importance to the Conservation Laboratory of the Freer Gallery. A generous contribution by John S. Thatcher supported Professor Yamasaki's lecture.

Hirshhorn Museum and Sculpture Garden

As the Hirshhorn Museum and Sculpture Garden completed its second full year of operation, a remarkable change had taken place. The building had become a familiar Washington landmark, and the Museum, through its collection and exhibition programs, had established itself as one of the nation's most popular museums of contemporary art.



Newly acquired by the Hirshhorn Museum and Sculpture Garden: *The Rooster (Le Coq)*, 1916, a painted bronze relief by the pioneer Cubist sculptor, Raymond Duchamp-Villon. Below: In opening ceremonies at the Hirshhorn Museum and Sculpture Garden on November 18, 1976, Mexican Ambassador José Juan de Olloqui and a guest view the celebrated Chac-Mool from Chichen-Itza. The Mesoamerican sculpture, part of the collection of the National Museum of Anthropology in Mexico City and dating from the tenth to the twelfth centuries A.D., was loaned to the Smithsonian by the people of Mexico in celebration of the Bicentennial of the United States.



In 1977 more than a million visitors were again recorded. Samplings of their written comments—submitted on forms provided at the Hirshhorn's lobby Information Desk—suggest their diversity. They range from those making their initial contact with contemporary art (most like it, a few do not) to experienced museumgoers suggesting greater representation of one or another of their favorite artists.

Central to the Museum's diversified 1977 program was a series of special exhibitions and installations utilizing both works of art drawn from its own collection and those borrowed from other sources. Two exhibitions—"Chac-Mool: A Bicentennial Loan from Mexico" and "14 Canadians: A Critic's Choice," guest curated by Andrew Hudson—saluted the nation's neighbors south and north.

The installation of the "Chac-Mool," one of Mexico's great treasures—never before seen outside of its permanent home in the National Museum of Anthropology in Mexico City—was augmented by a selection of Pre-Columbian sculpture from the Museum's own collection.

Another exhibition, "Winslow Homer Drawings," celebrated the opening of the Smithsonian's Cooper-Hewitt Museum of Design and Decorative Arts in New York and included thirty-two works drawn from the latter's extensive collection of Homer's works. "Kin and Communities," a special installation of works on the theme of the family, was mounted to mark the occasion of the Smithsonian's international symposium on that topic.

Besides Winslow Homer, eight other Americans served as subjects for solo exhibitions. Largest in scope were "Hans Hofmann"—a retrospective loan exhibition organized jointly with the Museum of Fine Arts, Houston, and selected by the noted painter and critic Walter Darby Bannard—and "The Thomas Eakins Collection of the Hirshhorn Museum and Sculpture Garden," the first extensive showing of this collection, one of the largest in the United States. Also drawn from the Museum's permanent collection were "E. E. Cummings: The Poet as Artist," an exhibition of sixty-six works by the well-known poet shown in connection with a Washington-wide project celebrating the collaboration of poetry and the visual arts, and "Arthur B. Carles," a smaller exhibition of the Museum's holdings of the paintings of the Philadelphia artist who died in 1952.

"Summer Sculpture '77: Jules Olitski" consisted of five monumental steel sculptures by this outstanding abstract painter. It was the Museum's first outdoor sculpture loan exhibition, and was originally organized by the Museum of Fine Arts, Boston. From this same source came an exhibition of large-scale figure paintings, landscapes, and allegories by the realist painter Alfred Leslie. Completing the roster of one-man exhibitions were showings of the work of two California artists: "Peter Plagens: Works on Paper," which included works drawn from eighteen private and public collections, and "The Photography of Leland Rice," the Museum's first exhibition of contemporary photography.

In one sense, however, the most significant exhibition presented during 1977 was "Acquisitions: 1974-1977." It included more than 130 works of art by 96 American and foreign artists. In the accompanying checklist, the exhibition's scope and the Museum's assessment of its significance were described this way:

All of the paintings, sculptures, prints, and drawings in this exhibition have been acquired since the opening of the Museum on October 1, 1974. As a group, they testify to the Museum's continuing commitment to contemporary art and to the enrichment of other aspects of its permanent collection.

When Joseph H. Hirshhorn presented to the Nation the approximately 6,000 works of art with which the Museum opened, he intended that the collection should be a living—not a static—one. During the past two and one half years the Museum has continued to acquire works of art both through purchase and gift, including a number of additional gifts from Mr. Hirshhorn. To him, and to the other 34 donors whose generosity this exhibition reflects, the Museum is deeply grateful.

Supplementing the Hirshhorn's exhibition schedule was an auditorium program of lectures, films, and symposia. Two of the latter, the most ambitious the Museum has yet undertaken, were of particular note. Organized in conjunction with the Museum's exhibition of contemporary Canadian painting and sculpture, "20th Century Canadian Culture," was an eleven-week series devoted to the literature, drama, and visual arts of Canada. Panel discussions and other events were presented both at the Museum and The Phillips

Collection under the sponsorship of the Association for Canadian Studies in the United States, and were made possible by a grant to the Association from the National Endowment for the Humanities. The keynote address at the opening ceremony, attended by Mrs. Joan Mondale and Mrs. Margaret Trudeau, together with members of the American and Canadian Diplomatic Corps, was delivered by Professor Northrop Frye of the University of Toronto.

In conjunction with the opening of its "Thomas Eakins" exhibition, the Museum organized a one-day symposium at which four of the nation's leading Eakins scholars presented papers that dealt with various aspects of the artist's career and work. Participating were Lloyd Goodrich, Evan Turner, Gordon Hendricks, and Maria Chamberlin-Hellman. On a separate evening, the eminent West Coast critic and art historian, Alfred Frankenstein, gave his own estimate of the artist in a lecture entitled "Eakins: A Dissenting View."

Other speakers during the year included the artists Alfred Leslie and Yaacov Agam; critics John Canaday, Walter Darby Bannard, and John Bernard Myers; and scholars Eugenia Parry Janis, Michael Klein, and Barbara Wolanin. A series of lectures—given in conjunction with the Museum's ongoing film program—included talks by filmmakers Jonas Mekas, Chuck Henry, Tony Bannon, Nancy Baer, and Doris Chase. The film program itself, which included special Saturday showings for children, continued its dual emphasis on films *about* art and film *as* art with showings each Tuesday and Thursday.

A series of Museum publications also supplemented the exhibition program. Outstanding was the 240-page catalogue of the Eakins exhibition. Nearly three years in preparation, under the supervision of curatorial assistant Phyllis Rosenzweig and incorporating the research efforts of graduate art-history students at the University of Delaware, it was widely hailed within weeks of its publication as a significant contribution to American art historical scholarship.

Through funds appropriated specifically for the purpose, as well as gifts received from a growing body of individual donors, the Museum was able to continue the important tasks of building its collection. In so doing, two areas were emphasized: the extension of the collection forward in time, in order that it should continue

to reflect ongoing developments in contemporary art; and the simultaneous enhancement of those areas—such as American and European sculpture of the past one hundred years—where it is possible to build upon its original strengths. From all sources, the Museum acquired 108 works of art during the year.

Since its opening, the Museum has continued to respond as generously as the prudent care of the collection will permit to requests for loans by other institutions. During the year, 107 loans were made to 38 museums and other organizations throughout the United States and abroad. Works of art borrowed from the Hirshhorn Museum were seen by the public in cities as far apart as Indianapolis and Zurich, Providence and Paris, and Houston and Tokyo.

The Museum also continued to explore other means by which its collection might be shared with a larger public than that able to see it in Washington. Most recently, it has organized an exhibition which includes one sculpture and one drawing by twenty-four major American and European artists of the past one hundred years to travel to three South Carolina art museums during 1977-1978. Other traveling exhibitions drawn from the permanent collection are being considered for later years with one—a national tour of paintings from the Museum's collection of the works of Louis B. Elshemius—now firmly scheduled to begin in 1979.

For those who were able to visit the Museum itself during the year, there was a wide range of educational activities. For many exhibitions, the staff prepared—in addition to catalogues—one- to five-page handouts, brochures, or checklists that were distributed to the public without charge. The Telesonic self-tour guide system was expanded by the creation of fifty-nine new tapes and the incorporation of a number of new or improved stations. And the Museum's docents, who contributed approximately 4,458 hours of volunteer time during the year, provided more than 28,317 visitors with general and special tours of the galleries.

One new program was developed specifically for children: "A Hirshhorn Holiday: An Adventure in Art and Illusion." Staged shortly before Christmas, this was a four-hour blend of continuous live performances, gallery tours, music, and animated films. It was made possible through the generosity and cooperation of the Women's Committee of the Smithsonian Associates and brought

more than 3,600 children to the Museum for a festive morning.

Underlying the year's ambitious public program was the effective behind-the-scenes work of many departments. The Department of Painting and Sculpture not only organized the Museum's exhibitions schedule but continued its long-term project of cataloguing and documenting the more than 6,000 works of art received when the Museum first opened in 1974, and also answered more than 290 research inquiries. The Department of Education was responsible for the ongoing training of docents, the supervision of the auditorium and tour programs, and the preparation of hand-outs, brochures, labels, and Telesonic tapes.

In addition, the Department of Education—working closely with the Department of Painting and Sculpture and other departments—administered the Museum's intern programs, which provide training to future museum professionals. During the year, the Museum trained interns, at both the graduate and undergraduate levels, from George Washington University, Brandeis University, University of California at Berkeley, New York University, and Trinity College of Hartford. A special intern was accepted from the Australian Gallery's Directors' Council. The Museum also provided facilities for two Smithsonian predoctoral fellows working in the field of American art history.

Also contributing importantly both to the care of the permanent collection and to the mounting of exhibitions were:

The Conservation Department which, in its newly completed laboratory, provided treatment for some 680 works of art, performed routine examinations, and prepared condition reports.

The Office of the Registrar, which supervised the movement of works of art both to and from the Museum as well as within the building itself, continued its project of translating the Museum's catalogue data into machine-retrievable forms.

The Department of Exhibits and Design, which was responsible for the design, construction, and installation of thirteen exhibitions, as well as for continuing changes in the installation of the permanent collection and the general design and appearance of the galleries, plaza, and Sculpture Garden.

Special note should be made of the retirement of the Administrative Officer, Joseph Sefekar, on May 7, 1977. Mr. Sefekar, who spent more than thirty-five years in government service, was one

of the Museum's first employees, having joined the staff in 1970, and contributed greatly to the Museum's growth.

Theodore E. Cummings, one of the Museum's original Trustees, resigned from the Board of Trustees on November 24, 1976, because of pressure of other obligations. To succeed him, the Trustees elected Jerome Greene, Esq., of New York City.

Joseph Henry Papers

Research and editing for Volume 3 of *The Papers of Joseph Henry* neared completion during the year, and the manuscript was scheduled to go to press. The centerpiece of the volume, covering Henry's career in 1836 and 1837, is a series of diary entries documenting his eight-month European sojourn. Complemented by sprightly diary entries by his American friend A. D. Bache, who accompanied Henry part of the way, the diaries constitute a mine of information for transatlantic scientific awareness and influence. An unexpected but equally important by-product of annotating these difficult entries has been the development of an unusual perspective on the European scientific scene, including features often neglected in conventional histories. It is very much a "living" history told through the eyes of participants. The result is expected to be a volume of interest not only to Americanists but to specialists in French, English, and Scottish science as well. The project continues to search repositories for further Henry documentation. Major finds have been made in recent additions to the James Hall papers at the New York State Library.

The Joseph Henry–Alexander Graham Bell Library was installed in the project's new quarters. These rare-book libraries, the project's other great historical resource, are now under proper temperature and security conditions. In addition, a major first step has been taken toward the renovation of the Joseph Henry Library, resulting in the rebinding of about 700 books during the past fiscal year.

The Henry Papers project, in addition to publishing its volumes, is increasingly recognized for its function as a central scholarly resource for science in America. It received inquiries and researchers

on a wide diversity of topics, including the history of research on sunspots, early United States–Japanese contacts on education and science, ideas of forest ecology, and the early years of the Smithsonian. The appearance of the Henry volumes has publicized to outside scholars the wide range of materials on hand at the project. The staff was also consulted by representatives of other existing and prospective historical editing projects (e.g., the Edison and Henry Laurens Papers), interested in applying its procedures, especially the computer index system. Over the fiscal year, the Henry Papers took on its usual complement of Smithsonian fellows, from visiting senior scholars to undergraduates. It has also welcomed two predoctoral fellows for the current and next fiscal year.

The Nineteenth-Century Seminar, under Nathan Reingold, continued to feature monthly presentations on an eclectic array of nineteenth-century subjects, including historic preservation, aeronautical history, photography, and art history.

National Collection of Fine Arts

The final presentations in the Museum's ambitious Bicentennial program were the stimulating exhibition of works by Robert Rauschenberg, one of the few major Bicentennial exhibitions accorded a living American artist, and the Renwick's colorful "Americas: The Decorative Arts in Latin America in the Era of the Revolution." The Rauschenberg exhibition, made up of some two hundred works representing all aspects of the artist's career borrowed from collections here and abroad, opened on October 28. The most comprehensive exhibition ever held of Rauschenberg's work, it was widely reviewed in the national press. After its closing in Washington, the exhibition was shown at the Museum of Modern Art in New York and then was scheduled to go on to San Francisco, Buffalo, and Chicago. The extensive catalogue accompanying the exhibition, published by the Smithsonian Institution Press, provides a thorough documentation of the artist's career, and remains of permanent value.

In the throes of Bicentennial enthusiasm, it was easy to lose sight of the fact that the new United States were not alone in the

Americas at the time they achieved their independence. As a reminder of the contemporary cultural scene, the Renwick Gallery gathered together a dazzling collection of treasures from ten Latin American countries, created during the period of the American Revolution, to present a rich and decorative complement to the more austere northern taste. The exhibition, "Americas," which later was shown in New York, was supplemented with lectures by scholars from Brazil, Venezuela, Mexico, Peru, Ecuador, and the United States, and with musical programs, all made possible through the cooperation of the Organization of American States, embassies, and the Smithsonian Associates. The handsome publication accompanying the exhibition included an informative text by Elizabeth Wilder Weismann.

The National Collection of Fine Arts' (NCFAs) exhibition program for the year was one of the largest and most varied in its history. Of the twenty-six exhibitions presented, eighteen were produced by the Museum, four were produced in close collaboration with other institutions, and three were produced elsewhere.

Renwick Gallery exhibitions ranged from "Paint on Wood," a historical survey of painted furniture that provided a provocative contrast to the purist side of modern taste, to the delightful embroidered pictures by Ethel Mohamed. As usual, most exhibitions were accompanied by special programs and films.

Even larger than the Rauschenberg exhibition was "Painting and Sculpture in California: The Modern Era" with some 250 works. Produced in association with the San Francisco Museum of Modern Art, where it was first shown (the selection was made by the Director, Henry Hopkins, in collaboration with NCFAs curator Walter Hopps), the exhibition continued NCFAs policy of studying the art of different areas of the United States in depth, begun with "Art of the Pacific Northwest" in 1974. The California exhibition was concerned with modern works from 1900 to the present and, although it made no effort to define a local style, did suggest the extraordinary vitality that has characterized art throughout the state.

As a moment of classical calm between the Rauschenberg and California showings, an exhibition of works by the sculptor Daniel Chester French (1850–1931), who executed so many well-known monuments in Washington, was produced in association with the

National Trust for Historic Preservation. Of like calm was the small exhibition of paintings and drawings by John White Alexander, French's contemporary.

In conjunction with a Washington-wide festival of art and poetry, "Inscapes," NCFEA celebrated the association of the two arts in a pair of highly original exhibitions: Peter Bermingham's "The Art of Poetry" in the Department of Education's Discover Gallery, and Lloyd Herman's "The Object as Poet" at the Renwick. Many of the works in "The Object as Poet" were created through collaboration by craftsmen and poets, some expressly for this showing. The major portion of this exhibition was later shown at the Museum of Contemporary Crafts in New York City.

No less poetic, in their way, were the prints of Jacob Kainen, displayed in an impressive retrospective exhibition by the Department of Prints and Drawings in November. On the occasion of the exhibition, which was later shown in Baltimore, the Museum published a complete catalogue of Kainen's prints. The galleries devoted to a selection of prints and drawings from the permanent collection were redesigned to allow more hanging space, and some large exhibitions, notably the prints of Mauricio Lasansky and the "25th National Exhibition of Prints," sponsored jointly with the Library of Congress, extended well into the newly organized areas.

An exhibition of particular interest was of the works of Arthur Wesley Dow (1857-1922), an influential teacher whose Japanese-inspired theories revolutionized art instruction throughout the country. This was the first representative showing of his own works. A major publication on Dow accompanied the exhibition.

The most spectacular addition to the permanent galleries was the Gellatly Gallery, opened in October. Named in honor of John Gellatly, who presented his large and varied collection to the Institution in 1929, its objects range from Greek gold and ancient Chinese jade and glass to medieval ivories, fine Renaissance jewelry, and intricately blown eighteenth-century glass reliefs. Mr. Gellatly, who also gave the collection most of its paintings by Albert Pinkham Ryder, wished to show that American art of his period was the equal of the fine European and Asiatic art of the past. Now, some of the treasures he collected for comparison can again be seen in context.

Since John Gellatly presented his gift, the NCFEA collection has grown enormously. It now consists of some 6,500 paintings and



Maurice Prendergast, *Summer, New England, 1912*, oil on canvas, 19 x 27 inches. A recent gift to the National Collection of Fine Arts. *Below*: Francis W. Edmonds, *The Speculator*, circa 1852, oil on canvas, 25 x 39 inches. A recent acquisition by the National Collection of Fine Arts, gift of Mr. and Mrs. Kevin McCann.





Adelyn Breeskin, Consultant for Twentieth-Century Painting and Sculpture at the National Collection of Fine Arts. *Below:* Young participants in Kaleidoscope Day in the National Collection of Fine Arts courtyard, June 4, 1977.



sculptures, almost 13,000 prints and drawings, and 2,000 works of decorative art. Among the carefully selected 1,000 new works accessioned this year were many of notable quality. Outstanding among the gifts were a superb 1912 painting by Maurice Prendergast, two especially fine early paintings by Milton Avery, an important large panel by Bob Thompson, whom the Museum remembered with an exhibition in 1975, and a large and lively painting by Stanley William Hayter, best known for his contributions to printmaking.

The Speculator, an expertly painted and amusing work by the nineteenth-century genre painter Francis W. Edmonds was a major gift in that area. A group of ninety-five works by Morris Kantor and a series of works by Charles Pollock and studies by Abraham Rattner add much to our understanding of these artists. For the nineteenth-century collection, major purchases included *Castle Rock, Marblehead* by Alfred Bricher, William Beard's amusing *The Darwinian*, and a luminous, early landscape by Elihu Vedder, for whom an extensive retrospective exhibition will be mounted in the fall of 1978. Two of the major twentieth-century works purchased were a large sculpture by Saul Baizerman and Ralston Crawford's precise and elegant *Buffalo Grain Elevator* of 1937.

In order to document the collection better and provide more material for the public and scholars, all matters pertaining to slides and photography were recently organized under a single office. This includes not only the photography laboratory and office of rights and reproductions, but the collection of 30,000 slides, 15,000 photographs, and 127,000 negatives of the Peter Juley and Son archives. The slide and photograph collection is now indexed on computer by artist and subject. An additional help to scholars has been the NCFAs continuing project of indexing works of artistic interest throughout the Smithsonian. In less than a year and a half more than 82,000 works have been listed.

The Museum published six books and major catalogues, five small catalogues, and various informational folders during the year. Research carried on by its fellows, who came from seven universities, ranged from the iconography of the West in the nineteenth century to the paintings of David Smith. Regular seminars were held for visiting scholars and the staff, and the intern programs in museum training continued successfully.

Each spring NCFAs resourceful docents (there are eighty-five including those at the Renwick) hold a special day-long event in the courtyard and galleries featuring artists, musicians, many things to do, and much gallery activity. Once called Children's Day, it has now become a day for all members of the family. It is now called *Kaleidoscope*, and the approximately 2,800 people, young and old, who came this year thoroughly enjoyed the experience. Families also came to the fifth high-school graphics exhibition, "Through the Eyes of New Printmakers," for which much of the planning and the catalogue were done by students. Still an additional audience celebrated the opening in the Discover Gallery of "Raíces y Visiones/Roots and Visions," which was a vital and colorful exhibition of works by American artists of Hispanic or Latin American origin who have consciously used their distinctive cultural background in developing their art.

National Museum of History and Technology

The year following the American Revolution Bicentennial has permitted the return to a more normal pattern and breadth of museum activity. Two of the nine Bicentennial exhibits were actually completed in 1977: "Belgian Gunmaking and American History" and "Person to Person," and new exhibits continued to be produced. Most staff members, however, were able to devote more of their time to research and professional activities, and to participation in public service responsibilities. A major effort has been applied to improving control of collections and to planning directions of museum development.

Improved control of collections has been substantially advanced. Thousands of objects borrowed from other museums and individuals to supplement the Museum's holdings for producing its major Bicentennial exhibitions, and the large number of objects loaned to other museums and institutions of learning for use in their Bicentennial exhibits, left a great wake of registrarial work involving staff at all levels in various aspects of collections management.



Secretary Ripley speaks on a vintage telephone, while Bernard S. Finn, organizer of the "Person to Person" exhibit, watches. Dr. Finn is Curator of Electricity and Nuclear Energy at the Museum of History and Technology.

During the same period and as part of the same effort, a new project was initiated to place accession and registration information into a central computer file. A total of some 15,000 objects has been added to this master file, and cataloguing for a great part of this total has been completed by Museum staff. This conversion will continue with each new object added to the collections.

The assignment of an expert member of the staff of the Office of the Registrar to each new exhibition project to manage the intricate registration procedures has proved to be extremely productive, and provides for the most efficient accountability of the multitude of objects involved in the process. The Office of the Registrar has now established control over current accessions and loans, and reports a total of more than 14,957,598 accessioned objects in our collections.

A recently implemented major resource contributing to the control of collections is the addition of a central processing facility operated by Kenneth Bush assisted by Larry Bird, under the supervision of the Office of the Registrar. All objects coming into and being sent out of the Museum are handled through this facility, with carefully recorded condition reports for all items, utilizing the most advanced scientifically developed methods of packing and handling.

The new emphasis upon collections management is a part of a planning program currently in progress. that will reorganize the Museum into more rationally related departments within which both research and collecting activity can be multiplied in their effectiveness. Technicians and specialists have been given new encouragement to participate with curators in the development of policies and specific programs for collecting and for exhibits.

Substantial additions to the collections were made during the year. Perhaps the largest item was a portion of a "balloon frame" house installed in the Hall of Everyday Life in the American Past. Built in Illinois in about 1855 for a farmer, John C. Cowing, the house was a gift of Patrick Murray, and its transfer to and installation in the Museum were made possible by a grant from Certain-Teed Corporation. The dwelling was disassembled and reassembled by Charles H. Rowell, specialist in period construction, with the cooperation of Curator Rodris Roth, in an exhibit designed by Deborah Bretzfelder. This type of innovative construction, common today,

employed thin presawn wood held together with mass-produced cut nails. Originating in Chicago in the early 1830s, it contributed to the rapid settlement of the West. The opening of the exhibit was marked with a special display on "Going to Housekeeping" and an illustrated lecture on "The Cowing House and Balloon-Frame Construction" by research consultant Paul E. Sprague, sponsored by the Latrobe Chapter of the Society of Architectural Historians and the Greater Washington Area Chapter of the Victorian Society in America.

Notable also was an underwriter duplex-type steam fire pump of about 1900, of the type manufactured by many builders to an absolutely standard design formulated by the Factory Mutual Insurance Companies and other underwriters, required to be installed in all industrial plants covered by the associated underwriters. Once found in almost every American mill, these machines saw almost universal service until their role was taken over by electricity-driven centrifugal pumps.

Contrasting in size are acquisitions of two clocks that are significant additions to the National Collections. A Seth Thomas pillar-and-scroll shelf clock dating from about 1820 is the only known example of the second of five models believed to have been constructed by Thomas in his efforts to produce a standard shelf-clock style suitable for mass production. The pillar-and-scroll, the design of which is credited to Thomas's contemporary, Eli Terry, was the first American mass-produced shelf clock.

Another horological acquisition was a tall-case clock made and signed by Peter Hill, the first black American clockmaker. Born a slave, Hill was trained in clockmaking by his owner, Joseph Hollinshead, Jr., of Burlington and Mount Holly, New Jersey. Subsequently achieving freedom, and later permitted to purchase the freedom of a slave girl who became his wife, Hill repaired and made clocks in Burlington and Mount Holly until 1820. He died bankrupt and is buried in the Friends Meeting House burial ground in Burlington. This signed, eight-day, brass-movement striking clock is one of only two known surviving signed examples of Hill's work.

The collections of the Department of Cultural History were significantly enriched by the gift from John Paul Remensnyder of his notable collection of American pottery, consisting of approximately 300 pieces illustrating the history of stoneware manufacture in the

Northeastern and Middle Atlantic states from the eighteenth to the middle of the nineteenth century. A fine silver teapot made by Barent Ten Eyck (1714–1795) of Albany for his cousin on the occasion of her marriage in 1734 was presented to the Museum by a descendant of that marriage. Among other acquisitions were an eighteenth-century violin from the workshop of Amati in Cremona, and a chamber organ made by Eben. Goodrich of Boston. Two important nineteenth-century grand pianos made by Steinway Sons were formally presented by the Steinway family at a ceremony that included music played by Van Cliburn on the 1892 Steinway grand used by Ignace Jan Paderewski during his 1892–1893 American concert tour. Related to the presentation, Cynthia Adams Hoover presented an illustrated lecture on “The Steinways and their Pianos in the Nineteenth Century.”

The Department of Applied Arts received the gift of an extensive collection of postage stamps formed by Mr. and Mrs. H. Earl Hoover of Glencoe, Illinois, as well as highly specialized collections of postal emissions of the Saar, nineteenth-century postage stamps and covers of Venezuela, and vintage stamp-printing apparatus. Among significant additions to the Department of National and Military History were a Collier flintlock revolver of about 1818; a collection of letters, sketchbooks, and gifts of Thomas Cochrane Dudley, who was assistant purser aboard the S.S. *Powhatan* during Commodore Perry’s expedition to Japan; a handsome Chinese export bowl decorated with the insignia of the Order of the Cincinnati, from the service owned by George Washington; a handsome collection of jewelry owned by Mrs. Jefferson Davis; the television stage furnishings used in the 1976 presidential campaign debates; the two chairs used by presidential candidates John F. Kennedy and Richard M. Nixon from the first televised presidential debates, in 1960; and a doll house and doll owned by the children of President Grover Cleveland.

Outstanding additions to the collections of the Department of Industries were a group of 450 pieces of rare ancient glass, a fine group of Wedgwood jasper ware, and twenty pieces of eighteenth-century Meissen porcelain as well as three outstanding presentation pieces of engraved glass of about 1786 made at Frederick Amelung’s New Bremen Glass Manufactory.

One of the most outstanding accessions of the past year has

been the Division of Transportation's sugar-plantation locomotive built in 1883 by the Baldwin Locomotive Works for service in Hawaii. Named the *Olomana*, the diminutive engine is on display in the Railroad Hall.

Although the major exhibits for the Bicentennial were completed in the past year, the Museum produced a new exhibition entitled "Person to Person," which celebrated the centenary of the telephone. Supported by substantial grants and donations of artifacts from various entities of the telephone industry, the exhibit focuses on the history of inter-person communication, how it has changed the American way of life, and the social impact of changes effected in its technical devices. The four thousand square feet of display features the original apparatus of Alexander Graham Bell; early switchboards, including an operating panel frame automatic switchboard from 1922; glass insulators; telephone-song sheet music; early telephone instruments; and a wide variety of operating units, including one incorporating a piece of the original wire used by Bell to summon Watson, his assistant, over which visitors to the exhibit may talk.

Representing a cooperative effort between the Museum's Division of Graphic Arts and the Department of Anthropology of the National Museum of Natural History was an exhibition entitled "Perfect Likenesses," which opened in April. Featuring drawings and paintings of American Indians made from life, paintings copied from them, and lithographs produced from them, the exhibition pointed to the changes that occurred from copy to copy. Organized by Dr. Peter C. Marzio and designed by Richard C. Virgo, with the assistance of Dr. Herman Viola, Director of the National Anthropological Archives, the exhibit assembled for the first time a wide range of materials never previously shown together.

On June 15 the Museum opened a special exhibition on the "Silver Jubilee" of Queen Elizabeth II of England. Based on the theme of American associations with members of the British royal family from the first English plantations in North America, the nucleus of the exhibit was a collection of materials loaned by special permission of the Queen from her personal collection in the Royal Library at Windsor Castle. Included were the original draft penned by Prince Albert of the famous "Trent Memorandum," which resolved the pending break in Anglo-American relations during the Civil

War; an exchange of letters between Queen Victoria and Mary Todd Lincoln following the assassination of President Lincoln; letters and a painting relating to the visit of the Prince of Wales, later King Edward VII, to the United States; a pair of telephones turned in ivory by Alexander Graham Bell for Queen Victoria; and Victoria's message of congratulations to President Buchanan, relayed over the submarine cable laid across the Atlantic.

Other objects in the collections included state gifts from the royal family to Presidents Truman, Eisenhower, Johnson, and Ford, in addition to other memorabilia borrowed from several presidential libraries, the United States National Archives, the Library of Congress, and the Maryland Historical Society. Organized and developed by Silvio A. Bedini, the exhibition was designed by James M. Mahoney of Exhibits Central and produced and installed by the cooperative efforts of the Office of Exhibits Central and the Museum's exhibits staff. Several days after the opening, the exhibition was visited by Princess Anne during her visit to Washington.

Temporary exhibits in special galleries included a photographic display, in the Hall of Photography, entitled "Photographing the Frontier," organized by Eugene Ostroff, Curator of Photography, and designed by Nadya Makovenyi. An exhibition on "Pochoir" was organized by Dr. Elizabeth Harris for the Hall of Printing and Graphic Arts, and designed by Richard S. Virgo.

Several special units are featured on the first floor of the Museum. An innovative approach to science education is the description of the Foucault pendulum on a nearby panel that was created by Dr. Faye Cannon and designed by Benjamin W. Lawless, Assistant Director for Design and Production. A whimsical display entitled "Ride On," representing the cooperative efforts of Curator Donald Berkebile and Designer Deborah Bretzfelder, combines some of the noteworthy bicycles from the Museum's collections with graphic materials to relate the technological and social history of the bicycle in American life at the beginning of the twentieth century.

In the special gallery created as an adjunct to the Dibner Library, Curator Dr. Jon B. Eklund produced an exhibition on "Art and Chemistry," combining manuscripts and published works from the Library with artifacts from the collections. This was followed by an exhibition entitled "Focusing on America," prepared by Dr. Cannon and designed by Deborah Bretzfelder, in conjunction with

the Washington meetings of the Seventh International Conference on the History of Cartography. Original maps chronicled the depiction of America in increasingly greater detail with the continuing exploration and development of the New World. The exhibit begins with a fifteenth-century world map in which the American continent does not appear, and terminates with panoramic views produced in the late nineteenth century, in which each mountain peak is depicted with its own characteristics. Featured are books from the Dibner Library; the field notebooks and other memorabilia of Major Andrew Ellicott, surveyor of the major national boundaries; and maps, charts, and scientific instruments from the Museum's collections. Of special significance is the mariner's astrolabe of Samuel de Champlain on loan from the New-York Historical Society.

In the Hall of Everyday Life in the American Past, a display of personal memorabilia, art work, family photograph albums, and other mementos reflecting the gathering of community groups and family reunions was produced to illustrate the phenomenon of reunions for the Smithsonian symposium "Kin and Communities." Designed by Deborah Bretzfelder, the exhibit was organized by Richard E. Ahlborn, Chairman of the Department of Cultural History, with the assistance of Carolyn Sadler and April Fehr, graduate students in anthropology.

A special display on "Thirteen Star Flags" was produced by Dr. Harold D. Langley, Associate Curator of Naval History, in cooperation with Mrs. Grace R. Cooper, Curator Emeritus of the Division of Textiles. The exhibition, designed by Deborah Bretzfelder, was produced for the annual Conference of Vexillologists, which met in Washington in June.

Much effort during the past year has focused on the development of collections and preparation of scripts and designs for the Hall of American Maritime Enterprise, which is scheduled to open to the public in 1978. Supported by grants from numerous maritime industries, the concept and outline for the hall were produced by Dr. Melvin H. Jackson, Curator of Marine History, with the assistance of historian Dr. Robert C. Post; the designer is Mrs. Nadya Makovenyi.

Considerable work has also been completed for a new exhibition being produced by the Museum in cooperation with the Energy Research and Development Administration (ERDA) on high-energy

particle accelerators. Entitled "Atom Smashers," this fifty-year retrospective exhibit was developed by Dr. Paul Forman, Curator of Modern Physics; the designer is John Schmid of ERDA and the project coordinator is Richard S. Virgo, the Museum's Chief of Design.

The Frank Nelson Doubleday Lectures for 1977 featured the topic "Education in the Real World," and brought to the Museum a wide range of speakers. Author John Updike opened the series with a discussion of "The Written Word." Congressman John Brademas of Indiana spoke on "Government and Education," while the third speaker, Alex Haley, author of *Roots*, presented a lecture on "Black Heritage." Designer Charles Eames examined "Education as a Found Object," and the final speaker in the series, James M. Hester, Rector of the United Nations University in Tokyo, selected as his topic, "Education for a Changed World."

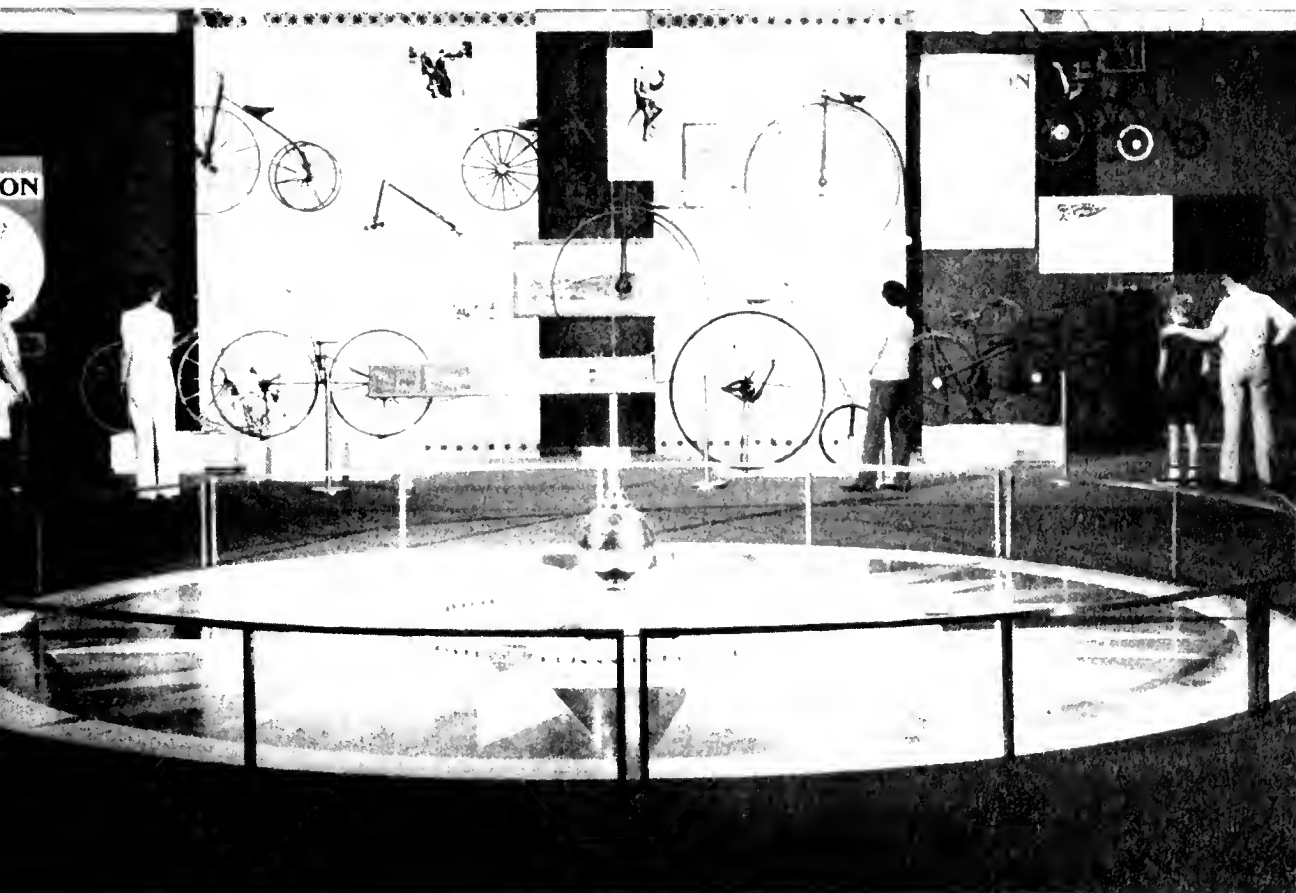
In October Silvio A. Bedini, Deputy Director, led a study group to Cairo and Alexandria, Egypt, to advise the Egyptian Ministry of Health on the establishment and development of museums for the history of medicine and pharmacy, in an ongoing program of cooperation under a treaty on health negotiated between the United States and Egypt. He was accompanied by Dr. Sami K. Hamarneh, the Museum's historian of pharmacy; Dr. John B. Blake, historian of the National Library of Medicine; and Dr. L. Max Brodny, Director, Museum of Surgical Science, International College of Surgeons in Chicago.

In November Dr. Brooke Hindle, Director of the Museum, presented the keynote address at the Fifth Annual United States Military Museum Conference held at the Presidio of San Francisco. In May he gave the annual address at the John Carter Brown Library, and in September 1977 he gave the opening address at the Westchester Museum Conference at the Rockefeller Archives Center.

In February Dr. Bernard S. Finn visited India upon invitation from the Indian Council of Scientific and Industrial Research, to consult on India's developing program of technology museums and to discuss a possible United States-India exhibition on the history of technology. He spoke on the exhibition of artifacts of technology at the Visvesvaraya Institute and Technology Museum and at the India Institute of Science at Bangalore, at the Birla Industrial and Technological Museum in Calcutta, and the Nehru Science Center in Bombay.



Alex Haley, author of *Roots*, was the speaker for the Frank Nelson Doubleday Lecture Series on February 23, 1977, at the National Museum of History and Technology. The title of his talk was "The Black Heritage." Below: The exhibition "Ride On" opened in May 1977 in the National Museum of History and Technology. The exhibit combined bicycles from the Museum's collections, posters from the Museum's Collection of Business Americana, and graphics from a Smithsonian Institution Traveling Exhibition Service exhibit.



Robert M. Vogel, Curator of Mechanical and Civil Engineering, participated in several important public events concerned with industrial archeology, including a "Section 106" hearing before the Advisory Council on Historic Preservation, called to assess potential damage to Baltimore's historic properties from a planned interstate highway. With the *Historic American Engineering Record* group of the National Park Service, he participated in a helicopter survey of the "Northeast Corridor," to view, photograph, and assess the significance of all structures along the mainline of the former Pennsylvania and New Haven railroads from Washington to Boston, in an effort to improve rail travel between the terminal cities. In May he delivered the keynote paper on the preservation and continued re-use of early industrial districts at a London conference sponsored jointly by the Victorian Society and the Association for Industrial Archeology.

Accepting a special invitation from Vatican authorities, Mr. Bedini spent five weeks in two visits to Rome conducting research on several projects in the library, archives, museums, and other facilities of the Vatican.

In May Robert G. Tillotson, Assistant Director for Administration, attended the annual meetings of the International Council of Museums (ICOM) held in Leningrad and Moscow. Also attending were Curators Philip K. Lundeberg and Cynthia A. Hoover, and Conservator Scott Odell. Mr. Tillotson is chairman of ICOM's International Committee on Museum Security, of which Dr. Lundeberg is the secretary. Earlier in the year, Mr. Tillotson coordinated the publication of a volume on *Museum Security* in English and French, published by ICOM with sponsorship by the Smithsonian Institution, the American Association of Museums, and the Mellon and Shell foundations. The work was developed by an ICOM International Committee of thirty-four authorities from nineteen countries.

The Eisenhower Institute for Historical Research was the host for several important scholarly gatherings during the year. In December a session on "Non-Americans in the American Revolution" was sponsored jointly by the Eisenhower Institute, the American Military Institute, and the United States Commission on Military History. Under the chairmanship of Professor Russell F. Weigley, the conference was attended by more than two hundred historians.

In May, the Eisenhower Institute joined the American Committee for the History of the Second World War in developing a conference on "Americans As Proconsuls: U. S. Military Government in Germany and Japan, 1944-1952," which was held at the Museum. It was the third and final conference of a series on United States occupation policy held in cooperation with the Douglas MacArthur Memorial Library and the George C. Marshall Research Library. The conference was attended by more than two hundred and fifty historians and individuals who had played important roles in military government during and after World War II.

Participating in the ongoing program of visiting scholars from the academic and museum worlds, Dr. Klaus Maurice, Curator of the Bavarian National Museum in Munich, spent six months at the Museum. During this period he performed research in his subject specialty of the history of horology and cooperated with Dr. Otto Mayr in the planning of an exhibition on German clocks of the period 1600 to 1650, to be produced in 1980 at the Bayerisches Nationalmuseum and the National Museum of History and Technology.

Several members of the curatorial staff continue as editors of scholarly periodicals in their fields. Dr. Robert P. Multhauf is editor of *ISIS*, the journal of the History of Science Society, and Dr. Bernard S. Finn is its managing editor. John H. White, Jr., continues to edit the semiannual publication *Railroad History*, while Dr. John T. Schlebecker is editor of the bimonthly *Living Historical Farms Bulletin*.

The Division of Musical Instruments was engaged in twenty-eight events featuring a variety of instruments from the collections, including several ensemble concerts by the Smithsonian Chamber Players under the direction of James Weaver. Performances were co-sponsored largely by the Friends of Music and the Ward Hamilton Memorial Fund for Folk Music. The Chamber Players also appeared in twenty performances throughout the United States in collaboration with the National Smithsonian Associates program to bring Smithsonian activities to other parts of the country. Harpsichord music of Jacques Duphly was recorded for the "Smithsonian Collection" on the Stehlin harpsichord from the collection, performed by James Weaver.

The Division of Education and Visitor Information cooperated closely with the District of Columbia school system by means of monthly meetings with administrative personnel, and emphasized adult education and special populations in especially designed programs. Among these programs was a ten-visit museum experience at the School Without Walls, presented to secondary school students by trained docents using the Museum's collections and exhibits to illuminate topics in nineteenth-century American social and political history.

School programs were also expanded by the addition of new lesson-tours designed specifically for primary grade students. Programs in special education and for the handicapped and elderly were enlarged during the year to include lesson-tours in transportation for learning-disabled students. Outreach programs were offered to a large number of nursing homes and senior citizen groups.

Throughout the year, the Museum attempted to reach a broad cross section of the Washington public through a variety of informal musical programs. Free concerts were held in the galleries, in the auditorium, and outdoors on the Mall terrace. At Christmas, local chorus groups and musicians performed in the Flag Hall. During the Easter and Cherry Blossom season, the Museum sponsored a Spring Celebration jointly with the Division of Performing Arts. This two-week long out-door music program featured military bands and local musical groups playing a variety of American music.

In order to call attention to the onset of summer hours, the Musical Instruments Division invited John MacFadyen of Busby, Scotland, to perform "An Evening of Scottish Piping" in the pendulum area. The concert was a huge success and drew approximately nine hundred people. High school musicians were also given an opportunity to perform outdoor programs on the Mall terrace during the tourist season. Young people from Maine, Connecticut, Illinois, and other states participated.

A three-day Fourth of July Celebration, sponsored with the Division of Performing Arts, offered music programs, puppet shows, barbershop quartets, craft demonstrations, cyclists, and a dance program on the Museum's terraces and grounds. Many of the traditions of an old-fashioned Fourth of July were recreated and approximately 200,000 visitors attended.

A special summer evening concert series by the United States

Navy Commodores held on Wednesdays in July and August drew 500 people to each concert. In the fall, the Museum started noon-time music concerts on Mondays and Fridays in the Carmichael auditorium.

Books published by the staff in 1977 reflected a wide range of the Museum's interests. *Physics, Patents & Politics* by historian Robert C. Post is the first full biography of Charles Grafton Page, a remarkable nineteenth-century experimentalist with electro-magnetism, who in his time was considered to be on a par with Joseph Henry, although his scientific achievements were overshadowed by his activities as a reformer and promoter. An important work on the American patent system and federal involvement with science and technology, it is published by Science History Publications.

An addition to the Museum series *Smithsonian Studies in History and Technology* is a volume by Peter C. Marzio on *The Art Crusade*, which provides an analysis of the numerous American drawing manuals produced between 1820 and 1860. Drs. Vladimir and Elvira E. Clain-Stefanelli wrote a popular book on the history of numismatics, entitled *Das grosse Buch der Munzen und Medaillen*, which was published in Munich. A useful little work on *Costume Display Techniques*, written by Karen Harris, the Section of Costume's museum specialist, was published by the American Association for State and Local History. Two research monographs published with the cooperation of the Division of Electricity and Nuclear Physics are *Relics of the Electrical Age* by Robert Belfield and *Saga of the Vacuum Tube* by Gerald F. J. Tyne.

National Portrait Gallery

During the past year 413 portraits were added by gift and purchase to the permanent collection of the National Portrait Gallery. Especially notable gifts to the collection this year were three likenesses of Joel Barlow—a drawing by John Vanderlyn, a miniature by William Dunlap, and a rare engraving by Ruotte—all donated by the present-day descendant of the subject who bears his illustrious ancestor's name. A magnificent daguerreotype of President Zachary Taylor and his son-in-law, Colonel William W. S. Bliss, was pur-

chased with the assistance of funds provided by the Quaker Oats Foundation. A striking portrait drawing of President Jimmy Carter by Jamie Wyeth, done from life at Plains, Georgia, in November 1976, was presented by the Peretz Foundation.

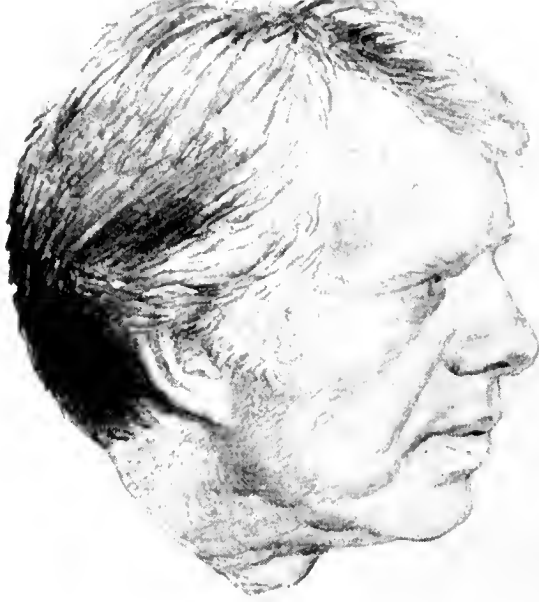
The most significant gift to the collection this year (indeed, perhaps of this decade) was the magnificent John Singleton Copley self-portrait, an acquisition made possible by a very generous matching grant from The Morris and Gwendolyn Cafritz Foundation.

Worthy of special mention among the year's purchases were a sparkling small oil of Benjamin West with his family by the artist himself in the garden of his house and studio in London; an extraordinarily vivid Sharples pastel of Joseph Priestly, the eminent scientist and political thinker, who became an American citizen in 1794 and spent the remainder of his life in this country; a brilliant watercolor self-portrait of one of America's greatest impressionists, Mary Cassatt; and a daguerreotype of General Thomas J. "Stonewall" Jackson, one of only two known such original photo images.

The Gallery mounted eight exhibitions during the period covered by this report. The most ambitious of these was "The President's Medal, 1789-1977," which dealt with presidential inaugural medals from the earliest times to the present. It was accompanied by a fully illustrated catalogue published by Clarkson N. Potter, Inc. This show has since gone on to the Lyndon B. Johnson Library in Austin, Texas. The other seven exhibitions were "Thomas Hart Benton," which celebrated the acquisition in the preceding year of a major self-portrait of the artist; "Not a Model Boy," marking the hundredth anniversary of the publication of *Tom Sawyer* by Mark Twain; "Gallant Harry of the West," in commemoration of the two-hundredth anniversary of the birth of Henry Clay; "Aaron Burr Acquitted," which dealt with Burr's trial for conspiracy; "Recent Acquisitions from the Department of Photographs," the first time a major selection of this new area of the Gallery's holdings was shown; "Illustrators of the Civil War: Conrad Wise Chapman and Winslow Homer," which was mounted in conjunction with the Gallery's permanent installation of Civil War period portraits; and "We Were But a Handful," which opened on the fifty-seventh anniversary of the ratification of the Women's Suffrage Amendment to the Constitution.



*Mary Cassatt, self-portrait in watercolor, circa 1880,
recently acquired by the National Portrait Gallery.*



Jimmy Carter, pencil drawing from life by Jamie Wyeth at Plains, Georgia, November 1976, was presented to the National Portrait Gallery by the Peretz Foundation. *Below*: Daguerreotype of President Zachary Taylor and his son-in-law, Colonel William W. S. Bliss, circa 1847, was purchased by the National Portrait Gallery with the assistance of funds provided by the Quaker Oats Foundation.



"Faces of Freedom," a half-hour film about the history of the United States as told through portraiture, produced for the Gallery by Charles Guggenheim and narrated by Charlton Heston, premiered in July and is now being shown daily in a small theater designed especially for that purpose adjacent to the front entrance of the Gallery.

David E. Finley, a member of the National Portrait Gallery Commission from its inception, and the one person more than any other responsible for the existence of the Gallery, died on February 1, 1977. A generous bequest by Mr. Finley made possible the acquisition of a long-sought-after portrait print of Pocahontas by Simon van de Passe, done in 1616, which is yet another way whereby the name of David E. Finley will continue to be remembered. Wilmarth Sheldon Lewis, also one of the first Commissioners of the Gallery, retired from its membership on August 25, 1976. Mr. Lewis's service to the Gallery from its earliest days has been invaluable, and we look forward to many more years of his wise counsel.

Office of Academic Studies

In its role as a leader in the international scholarly community, the Smithsonian maintains close scholarly ties with universities, museums, and research institutions around the world. Among the most important of these connections are the Institution's academic programs. Through them young scholars come to the Smithsonian, bringing a refreshing spirit of vitality to the basic research efforts of the Institution. This continuous infusion of new ideas and enthusiasm assists in maintaining a high level of intellectual diversity and vigor.

With policy direction from the Board of Academic Studies, the Office of Academic Studies acts as the center through which the Smithsonian's research activities pursue their academic objectives. Academic programs reflect the character of the research and collection strengths of the Smithsonian. They deliberately avoid duplication of university-based study and research, stressing new perspectives on academic subjects and disciplines not commonly studied in the university. These programs range from off-campus undergradu-

ate studies to traditional postdoctoral research-training fellowships. They are flexible, giving assistance to individuals who need to study at the Institution for a few days and to persons who require the research resources of the Institution for a year or more.

Fellowships are awarded to postdoctoral scholars to spend six months to one year participating in a program of advanced research training. Predoctoral Fellows receive appointments for a similar period to conduct research necessary to complete their dissertations. During 1976–1977 sixty-nine postdoctoral and predoctoral fellows were appointed. Students who need to spend a shorter period pursuing their research in consultation with the research staff of the Smithsonian are offered ten-week appointments. During 1976–1977 sixteen such appointments were made. The Office of Academic Studies also conducts a Short-Term Visitor Program, under which twenty-two visitors spent one week to a month at the Institution during the past year.

Smaller academic programs continue to be developed by individual bureaus of the Institution to meet specific needs that cannot be met by those Institution-wide programs conducted by the Office of Academic Studies. In the past year the Hirshhorn Museum and Sculpture Garden, the National Zoological Park, and the National Collection of Fine Arts have continued to conduct specialized academic programs for undergraduate and graduate students.

A system developed to maintain regular contact with past fellows has resulted in an index that includes a listing of significant books and articles resulting from fellows' tenure at the Institution.

A total of 146 individuals participated in the Smithsonian's academic studies programs during 1976–1977. A listing of individual names and research projects may be found in Appendix 7.

Office of American and Folklife Studies

The Office of American Studies continued its program in graduate education throughout the year. The fall 1976 seminar in "Material Aspects of American Civilization" had as its theme "American Museums in the Year of the Bicentennial." Taught by the Director of the Program, Dr. Wilcomb E. Washburn, and Professor Bernard

Mergen, of The George Washington University, the course had twenty-five students.

Other seminars given during the academic year 1976–1977 included: “The American Decorative Arts in Historic Preservation,” taught by Babara Carson; “The Material Culture of Alexandria, Virginia: 1770–1830,” taught by Dennis O’Toole, Curator of Education of the National Portrait Gallery; and “American Art and American History,” taught by Lillian Miller, Historian of American Art and History of the National Portrait Gallery.

Individual students continued to pursue specialized research under the supervision of the Director of the Program.

In November 1976 a Folklife Unit was established at the Smithsonian Institution within the Office of American Studies. Concomitantly, the Director of the American Studies Program, Dr. Washburn, was appointed Chairman of the newly established Folklife Advisory Council, which held its first meeting January 7, 1977. The Council was established by Secretary Ripley to “advise and guide the evolution of our documentation, Festival, and other folklife activities” at the Smithsonian Institution. Under the guidance of the Advisory Council, the Folklife Unit staff made major progress toward organizing the documentary materials amassed from the ten Festivals of American Folklife held by the Smithsonian, and formulated plans for the utilization of these materials in scholarly publications.

Dr. Washburn spent a month, starting in January, as Regents Lecturer at the University of California, Berkeley. He also attended the Second International Reunion of the History of the Art of Navigation and of Hydrography at the invitation of the Documentation Section of the Brazilian Navy in Salvador, Bahia. Afterward, the Director attended meetings in Rio de Janeiro of the Instituto Histórico e Geográfico Brasileiro, of which he is one of two United States members. In October 1976 he delivered a paper entitled “Reflections of an Historian about Archives Past and Present with Special Reference to the United States” at Simon Fraser University in Burnaby, British Columbia.



President Jimmy Carter inspects "Silverworks from Rio de la Plata, Argentina" exhibition at the Pan American Union Building before addressing a meeting of the Organization of American States. With him is Rafael Sarda, an OAS official. "Silverworks from Rio de la Plata, Argentina" is a major international exhibition being circulated by the Smithsonian Institution Traveling Exhibition Service. (Official White House photo)

MUSEUM PROGRAMS

TWO WORDS HAVE OFTEN BEEN USED to describe museums—"attic" and "iceberg." It is a moot question whether the word "attic," when it was used in the nineteenth century, had the pejorative connotations that we attribute to it today. An attic was once considered a secure place, a safe spot to house heirlooms, hope chests, or the legacies of relatives. Yet, the term connotes misuse and underuse; out of sight, out of mind; reservoirs of obsolescence rather than treasures to be shared with one's descendants. It evokes unwanted burdens that lassitude has elbowed out of consciousness. Hence, museums no longer want to be referred to as attics. What about icebergs? That terminology arose when it became increasingly evident that the vast proportion of museum collections, by necessity, could not be exhibited to the public, either because there was not enough space to do so properly, as was so often the case, or because collections were not spectacular enough or were too repetitive to enlighten but a small percentage of visitors, a special audience that was far more content to search through drawers and study objects close at hand in a storeroom, laboratory, or office than in public exhibition spaces with the attendant interference of glass vitrines and wandering public.

A great majority of the world's most important museums are icebergs, in that a great proportion of their resources are hidden away from the general public and are accessible, primarily, to the research staffs who curate them and who seek out new knowledge with the occasional assistance of visiting scholars.

The semantic comparison between a museum and an iceberg, however, falls apart since one expects that an iceberg will melt. The museum iceberg, on the contrary, far from melting, keeps growing in an orderly fashion based upon the needs of scholarship, the desire of society to know more about its evolution, and the moral obli-

gation to pass the material testimony of the past to future generations.

The museum iceberg also is not a cold, uninviting environment but rather one where continuity from one civilization to another can be traced, and where, in spite of the traumas to which human kind has been subjected repeatedly over the ages, the evidence can be found that reason, hope, and creativity can survive. That is the important message of the collections in our care, that is their seminal significance for the future, that is why so many of the resources and so large a portion of the efforts expended on their behalf, which to an outsider may seem superfluous or even wasteful, are, on the contrary, essential if these resources are to be studied adequately, interpreted, and transmitted for the benefit of this and future generations.

It is to these ends that the Office of Museum Programs' various entities are dedicated. In this year following the Bicentennial, all have shifted from that one momentous series of activities to less visible but no less necessary tasks.

Perhaps the most important mission carried out during the year was the Collection Management and Policy Study undertaken by the Chief Registrar, with the cooperation of the museums. This, for the first time, attempted to analyze policies and procedures that govern the acquisition and management of the Institution's collections. The first phase of this enormous task, made particularly complex by the variety of the resources involved, has been completed. It will now be refined to become an instrument to strengthen the governance of the Institution as well as to provide an example of self-analysis useful to others.

The Libraries are now serving their constituency at a far higher rate of user satisfaction than heretofore. The leadership of Dr. Russell Shank, for ten years the Institution's Director of Libraries, is responsible for this happy state of affairs. Under his direction, the Libraries grew in resources and service, and its internal organization was strengthened. It was with regret that we learned that Dr. Shank had accepted the position of Director of Libraries of the University of California at Los Angeles. This regret was tinged with pride that he was receiving such professional and academic recognition in an area of the country in which he wanted to live. The quality of Dr. Shank's leadership was further recognized, shortly before his departure, by his election to the presidency of the American Library Association.

All of the units responsible to the Assistant Secretary for Museum Programs have refined their procedures and enriched their offerings. Perhaps it would not be inappropriate to pay special tribute to the Department of Horticulture which, in spite of one of the harshest winters on record, a small staff, and temperamental summer weather, has provided visual delight on and around the Mall and has enriched, with its special green touch, many exhibitions and other public events. The roots of service grow deep in that department and roots, just like icebergs, though out of sight, are as essential for the ultimate flowerings of plants as reserve collections are to a museum's ability to provide, through the objects in its care, the material evidence of mankind's evolution.

Conservation Analytical Laboratory

The Conservation Analytical Laboratory (CAL) supports the Institution's programs by providing conservation service and advice on many diverse objects in the National Collections.

In cooperation with Conservation Information Programs, CAL continued its educational programs through video-taped conservation-orientation lectures and its collaboration with the National Bureau of Standards on a series of seminars on various scientific subjects related to conservation and archaeometry.

In response to growing demands for information from the public, a system of continually revised, "standard" answers to questions on the preservation of objects in every conceivable material was initiated in February 1977. In six months 150 "hand-outs" were completed, enabling prompt response to over 500 public questions.

Fulfilling the Institution's commitment to research, CAL supported Dr. James Blackman, a postdoctoral fellow, in the examination of the obsidian and steatite artifacts from Tall-i Malyan, Anshan, a mid-4th-to-late-2nd-millennium B.C. city in the highlands of southwestern Iran; and Dr. Frederick Fraikor, in the study of the copper, bronze, and iron objects excavated at Tell Jemmeh, Israel.

Several CAL staff members were involved in local, national, and international activities:

R. M. Organ, Chief of CAL, and Eleanor McMillan, Supervisory Conservator, participated in the meetings in May of the International Council of Museums in Leningrad and Moscow. Mr. Organ also lectured in May to the conservators at the International Centre for Conservation, Rome, where Nikki Horton, Conservator-in-training at CAL, was attending the four-month course, "Fundamental Principles of Conservation."

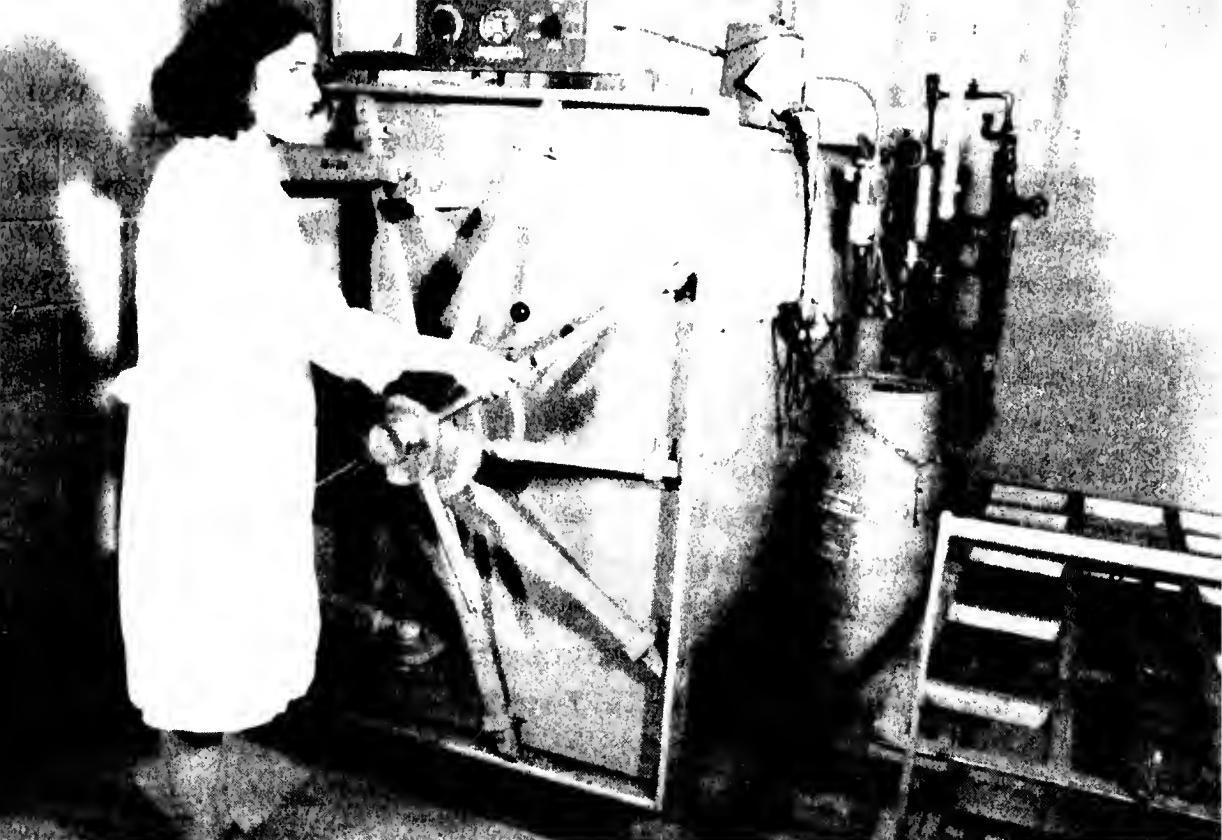
Eleanor McMillan and R. M. Organ were lecturers and moderators for a workshop on the Principles of Conservation and Preventive Care organized by the Office of Museum Programs at the Smithsonian.

Jacqueline S. Olin, Research Chemist, presented a paper at the Archaeological Chemistry Symposium of the American Chemical Society meeting in Chicago, Illinois, which was also attended by Walter Hopwood, Chemist.

Martha E. Goodway presented a paper at the annual meeting of the American Institute for Conservation, Boston, Massachusetts, which was also attended by several CAL Conservators, each of whom specializes in a specific field of conservation.

National Museum Act Program

The National Museum Act of 1966 reaffirms the Smithsonian Institution's traditional role of assisting other museums, and authorizes the Institution to strengthen its activities of service to them. The Act directs the Institution to cooperate with museums and their professional organizations in a continuing study of museum problems and opportunities in the United States and abroad; to prepare and carry out programs for training career employees in museum practices; to prepare significant museum publications; to perform research on museum techniques; and to cooperate with departments and agencies of the government concerned with museums. Within these objectives, emphasis is given to projects dealing with museum conservation: the study of conservation problems, research leading to new or improved conservation techniques, and training of museum conservators.



Eleni Martin, Conservation Aide, is shown operating the fumigation chamber in the Conservation Analytical Laboratory. *Below:* At their benches, Conservators Ed McManus, Mary Lou Garbin, and Greg Byrne work on a variety of objects—an 1876 silver-plated decorative vessel, one of several pairs of turn-of-the-century ice skates, and one of two large nineteenth-century terra cotta relief panels each of which depicts a Biblical scene.



Funds appropriated to the Smithsonian for the implementation of the National Museum Act are made available primarily by grants and contracts to museums, nonprofit museum-related organizations and associations, academic institutions, and individuals employed or sponsored by eligible organizations. Each year, guidelines describing the specific grant program offerings and application requirements are distributed widely to the museum community and institutions having an interest in the objectives of the National Museum Act.

Applications for support are reviewed and evaluated by an Advisory Council composed of museum professionals who represent a cross section of museum interests and disciplines as well as various regions of the United States. Members of the Advisory Council are appointed to three-year terms by the Secretary of the Smithsonian Institution. The members in 1977 were:

Robert Feller, Senior Fellow
National Gallery of Art Research Project

Russell Fridley, Director
Minnesota Historical Society

Bonnie Pitman Gelles
Museum Consultant
Washington, D.C.

Julia Hotton, Assistant Director
Public Affairs and Development
The Brooklyn Museum

Philip S. Humphrey, Director
Museum of Natural History
University of Kansas

Thomas W. Leavitt, Director
Merrimack Valley Textile Museum

Joseph Veach Noble, President
American Association of Museums and
Director, Museum of the City of New York

Richard H. Randall, Director
Walters Art Gallery

Mitchell Wilder, Director
Amon Carter Museum of Western Art

Vernal L. Yadon, Director
Pacific Grove Museum of Natural History

Paul N. Perrot, Chairman
Assistant Secretary for Museum Programs
Smithsonian Institution

In addition to its review and evaluation of applications, the Advisory Council assists with the determination of policies governing the grant program and with the establishment of standards which applicants must meet. The Council requires that projects supported by the National Museum Act must be of substantial value to the museum profession as a whole, and must contribute to the improvement of museum methods and practices or to the professional growth of individuals entering or working in the museum field.

In 1977, the National Museum Act received an appropriation of \$790,027. A total of 224 proposals requesting more than \$2,800,000 were received and reviewed during the year. The Advisory Council recommended funding for 82 grants totaling \$726,430. Of this amount, \$286,106 was directed to conservation training and research activities.

A majority of the projects supported in 1977 were associated with training individuals entering or working in the museum field. This support has provided approximately 700 persons with an opportunity to receive theoretical and practical training in various museum functions, including exhibition, administration, museum education, conservation, and curation. Among the major conservation projects supported by the National Museum Act in 1977 was the National Conservation Advisory Council, a body comprised of leading figures in the field, which is investigating the current status of museum conservation in the United States. Initial reports of the NCAC examine the training of conservators, education of users, scientific support, and conservation facilities, and provide recommendations for the establishment of a cohesive national conservation program. Another National Museum Act project related to conservation is being undertaken by the School of Textiles at North Carolina State University and involves the study of textile aging and degradation mechanisms. The results of the study will be invaluable in the development of systems for preserving textiles in the nation's museums. (A full list of the projects supported by the National Museum Act is included in Appendix 3 to this volume.)

Although many of the projects have provisions for publishing and distributing the results to the profession, the National Museum Act maintains copies of all project reports in the Museum Reference Center of the Office of Museum Programs, where they are available for study and reference.

Office of Exhibits Central

Highlights of the busy, fruitful year were (1) the Silver Jubilee exhibition which the Office of Exhibits Central (OEC) designed, edited, produced, and installed at the National Museum of History and Technology in honor of Queen Elizabeth II (and visited by her daughter Princess Anne), and (2) the international acclaim accorded the motion-picture unit which received three Emmys—in the Production, Direction, and Cinematography/Editing categories—for the *Festival of American Folklife. Celebrating a Century: The Philadelphia Centennial Exhibition of 1876*, also produced by the motion-picture unit, is being widely shown and recognized. It, too, is an award-winner (five awards), as are *The Big Cats and How They Came to Be* and *Tiger*, produced for the National Zoological Park.

Shortly before the Smithsonian subway station was opened, OEC completed the installation of the last in a series of three-dimensional directories, keyed in six languages to orient and guide Mall visitors.

A major portion of OEC's time and talent has supported the Smithsonian Institution Traveling Exhibition Service. The OEC exhibits editors have edited, and sometimes also written, label and other copy for virtually all Smithsonian Institution Traveling Exhibition Service exhibitions—and provided printed labels for most. OEC designers, graphics specialists, modelmakers, cabinetmakers, and other staff members also lent their creative talents to the full schedule of SITES exhibitions.

In addition to SITES, OEC has provided specialized assistance to virtually every other Smithsonian facility, and to some non-Smithsonian activities, ranging from the Botanical Garden to the President's Commission on Mental Retardation. Exceptional projects have included the custom-sculptured mannequin of Mrs. Gerald R. Ford for the First Ladies Hall, extensive participation in the Festival of American Folklife, label editing and printing for most National Museum of History and Technology exhibitions, brochures for the Smithsonian National Associates Program, and an exhibition for the reception area at the Chesapeake Bay Center for Environmental Studies.

The freeze-dry laboratory is back in full operation, handling more than 600 objects during the year. Its scientist, Rolland O. Hower, is

cooperating with Harvard University on improved preservation of the nation's oldest collection of human pathologic and anatomic material, and is working with pathologists at the Memorial Sloan-Kettering Hospital Cancer Center. His manual on the freeze-dry preservation of biological specimens has been written, reviewed, edited, and submitted for publication.

Office of Horticulture

Working with the various Smithsonian museums and allied organizations, the Office of Horticulture provided horticultural plantings for special exhibits and events such as the Inaugural Celebrations at the John F. Kennedy Center, the Cooper-Hewitt Conservatory, the exhibition "Paint on Wood" at the Renwick Museum, and the special dinner at the National Air and Space Museum commemorating the fiftieth anniversary of Lindbergh's transatlantic flight. The Office of Horticulture participated in over two hundred special programs sponsored by the Institution.

Assisting the Women's Committee of the Smithsonian Associates, the Office designed and installed plantings for the 1976 "White Christmas" benefit. Assistance was also provided to the Women's Committee's fund-raising event at the opening of the Lord & Taylor store at the new White Flint Mall. All proceeds from this benefit were donated to the Office of Horticulture for use in the construction of the mini-garden between the Arts and Industries Building and the Hirshhorn Museum and Sculpture Garden.

New plantings in the Victorian Garden, which is located in the South Yard of the Smithsonian Institution Building, include two floral beds. This summer five antique cast iron Victorian urns were added to the garden and planted with a large variety of upright and trailing tropicals and blooming annuals. Hanging baskets were also hung from the lamp posts. All trees, shrubs, and bedding plants in the Victorian Garden are labeled to add educational interest to this lovely, quiet garden.

Much work has been completed this year on the renovation of the Office of Horticulture's greenhouse-nursery complex which is leased from the United States Soldiers' and Airmen's Home located at 3700

N. Capitol Street, N.W. Also located there is the Institution's growing orchid collection which now includes over 1,000 plants, and all the state flowers and state trees which were donated by the states who participated in the Office of Horticulture's Bicentennial project. These plants will be used for the interior and exterior landscaping schemes of the Smithsonian museums on the Mall.

A major project, and the first exhibit of the Office of Horticulture to be displayed outside the Institution, was installed at the Williamsburg Garden Symposium last March. This exhibit included nine panels of photographs of Victorian bedding designs, Victorian garden accessories and furniture, and live bedding plants which were planted in small embroidery parterres similar to those in the Victorian Garden.

The Horticultural Advisory Committee of the Institution met three times this year to discuss projects and the future development of the Office of Horticulture, including the Victorian Garden, the Cooper-Hewitt Conservatory, the grounds at Belmont, the Hirshhorn Museum and Sculpture Garden, and the renovation of the grounds of the National Museum of History and Technology.

Office of Museum Programs

The museum field looks to the Smithsonian Institution as a major resource for information on the latest developments and up-to-date practices in museum operations. Through the Office of Museum Programs, the Institution seeks to provide much-needed assistance and information.

The Workshop Series provided training for museum personnel from the United States and abroad through three-, four-, and five-day workshops at the Institution. The subject matter of the workshops includes exhibit preparation, educational management, docent training, grant solicitation, collection management and maintenance, evaluation, membership development, budgeting and accounting, and interpretation. Enrollment for the workshops ranges from twelve to twenty individuals, representing museums with a wide geographic distribution. The Office also conducted four on-site workshops in the Boston area. In addition, the Office of Museum

Programs offered workshops to Smithsonian Institution personnel on insurance, conservation, label-writing, and lighting.

The Internship Program over the years has offered opportunities for individual training to 323 United States and foreign museum employees. It now averages twenty persons a year. Interns serving in departments and offices throughout the Institution include United States residents and museum professionals from African, Asian, European, and South American nations. Internships, without stipend, vary in length from three weeks to two years, although the average length is three to four months. As with the workshops, the focus for the internships is museum techniques, and intern assignments may involve assisting with research, collections management, education, cataloguing, and exhibit preparation.

The Conservation Information Program is charged with developing audiovisual presentations demonstrating basic principles of museum conservation. It is further charged with distributing these presentations throughout the United States and around the world.

The information produced by the Conservation Information Program is intended to be used by conservators and students of conservation, or nonconservation personnel (e.g., curators, exhibits specialists, etc.). Thus, some presentations illustrate approaches to the treatment of objects, while others attempt to educate the viewers to the importance of safeguarding collections from negligence, ignorance, or environmental extremes.

The Program has completed a core series of eighty video tapes orienting museum personnel to the procedures and chemistry of conservation, plus a selection of eleven slide/audio presentations and video tapes dealing with specific topics. Each of these eleven tapes is supported by printed matter which provides preliminary or supporting information and identifies the sources of that information. Since 1974, more than 894 slide shows and 523 packages of two or four video tapes have been loaned to museums and museum training organizations. In response to viewer demand, sales of tapes and slide shows were begun in 1976. To date, fifteen institutions in the United States, Canada, Australia, Sweden, and Great Britain have purchased 53 slide shows and 424 video tapes.

Career counseling for people interested in the museum field is a subsidiary activity of the Office of Museum Programs, along with the organization of national conferences. Resource materials are

compiled, and staff serve as consultants for other museum studies programs. A Museum Evaluation Conference was held in June 1977, attended by psychologists, evaluators, and museum personnel. The taped proceedings have been transcribed and will be disseminated.

The Psychological Studies Program provides an increasingly requested service to the Institution's museums, and has attained a leadership role for its research methodology, and the assembly of analytical data. There is mounting evidence that museums need to evaluate the effectiveness of their services and the impact of these on the visiting public, and to examine their roles as social, cultural, and educational institutions.

A number of internal studies have been completed on visitor behavior, guards, orientation, docent evaluation, exhibitions; and a consultant service has been developed for other museums which are involved in evaluation programs. The staff psychologist counsels and works with staff of Smithsonian Institution museums in their search to assess the effectiveness of their exhibition and educational programs.

The Museum Reference Center, a unique working collection of resources on all aspects of museum operations, is located in the Office of Museum Programs. It provides reference assistance to professional museum personnel and researchers throughout the world. Its files contain up-to-date information on museum organization, administration and management, legislation, exhibitions, support services, museum architecture, exhibit design, the history and philosophy of museums, management of museum collections, conservation, museum education, and related areas such as experimental, educational, and behavioral psychology.

The Reference Center offers the following services to museum professionals and qualified researchers within and without the Institution:

- Literature searching
- Bibliographies on selected subjects
- Information on current museum activities
- Information on current issues in the profession
- Selected materials from Office of Museum Programs workshops
- Files on professionals activities and training opportunities
- Access to the collection for research use.

The Native American Museum Training Program, initiated in 1977, has been organized in response to increasing requests from

the Native American communities for assistance in establishing, operating, and maintaining tribal museums in order to preserve their cultural heritage. Existing avenues of assistance and training in museology generally have not been available to Native Americans; this new program is intended to fill this void.

To determine the training needs of Native Americans and coordinate activities designed to meet those needs, the position of Native American Training Program Coordinator was created, and Dr. James A. Hanson was appointed to fill it. He serves as liaison between the Institution's Office of Museum Programs and the Department of Anthropology, which has had an American Indian Cultural Resources Training Program (Archives) since 1973, as well as other involved agencies, and the Native Americans. Over 80 tribes have already built museums or are planning to establish them. Other tribes have expressed serious interest in having a professionally maintained cultural facility. Practical training in theory and technique along with consultation and encouragement will be offered.

Part I of the new multifaceted training program will provide for a pilot series of four seminars at locations easily accessible to several native groups. Part II will consist of internships at the Smithsonian for periods varying from one to two months, adjusted to the individual's requirements in conservation, exhibit design and construction, registration, management and research. Smithsonian staff will supervise the training activities in their fields of expertise. Part III will encourage cooperation with museums in other parts of the country. This can develop into long-range assistance, exchange of information and, wherever applicable, sharing of resources.

Office of the Registrar

The Institution's major collections policy and management study dominated activity in the Office this year. Staff members were heavily involved in data gathering, writing, and editing as well as in production of interim and final reports.

Coordination of registrarial activities was provided as usual through the Central Registrar and the Council of Registrars. The

role of the Council continued to expand during the year. In addition to regular monthly meetings at which business was transacted and featured professional discussions were presented, the Council sponsored various cooperative projects. This year members of the Council served as instructors in a seminar on museum registration methods, part of the Workshop Series offered by the Office of Museum Programs for employees of museums in the United States and foreign countries. Work on next year's seminar is now under way, and plans are being developed for an intramural seminar series for employees of Registrar's offices in Smithsonian bureaus.

The Office itself, while continuing to serve as a clearinghouse for Council matters, pursued projects of its own at the Institutional level. Ongoing projects include an inventory of data elements used in collections management information systems, an analysis of potential subject thesauri, an investigation of how information in automated files on the various collections might be applied to Institution-wide needs, and a feasibility study on data processing standards. Staff members of the Registrar's Office are active in the Museum Computer Network and the Museum Data Bank Committee. During the past year they participated in a successful effort to form a nationwide organization of museum registrars, and to have it recognized officially as the Registrars Committee of the American Association of Museums. As a representative from this body, the Smithsonian Institution Registrar is serving as chairman of an American Association of Museums subcommittee on future objectives for registrarial personnel in the museum profession. Of particular interest at the present time are discussions and proposals concerning world and national heritage trusts. In connection with the latter of these concepts, the Office submitted a National Heritage Trust Task Force paper on the essential components of our cultural and natural heritages.

Smithsonian Institution Archives

During the year much staff time was devoted to the preparation of a new *Guide to the Smithsonian Archives*. Scheduled for publication in fiscal year 1978, it contains over 400 entries. Work con-

tinued on the records of the National Museum of Natural History and the National Museum of History and Technology. A survey of the manuscript collections of the National Museum of History and Technology was completed, and the results will be published in a guide during 1978. A records survey was started in the National Air and Space Museum.

Major accessions were reviewed from the National Museum of Natural History, the National Museum of History and Technology, the National Museum Act Program, the Interdisciplinary Communications Program, and the Bicentennial Coordinator. Other accessions of note include the papers of Helmut Buechner, Robert A. Brooks, Waldo L. Schmitt, Edward A. Preblem, William Mann, and C. B. Wilson.

The Archives' Oral History Program continued, with emphasis on the history of the National Museum of Natural History. Thirteen interviews, totaling over sixteen hours, were conducted.

Scholars continued to visit the Archives during fiscal year 1977. Several recent publications have appeared, based at least in part on material in the Archives. Among them are: Curtis M. Hinsley, Jr., *The Development of a Profession: Anthropology in Washington, D. C., 1846-1903*, Ph.D. dissertation, University of Wisconsin at Madison, 1976; Arthur P. Molella, "The Electric Motor, the Telegraph, and Joseph Henry's Theory of Technological Progress," *Proceedings of the Institute of Electrical and Electronics Engineers*, 64 (1976): 1273-1278; and Lester D. Stephens, "Evolution and Woman's Rights in the 1890's: The Views of Joseph LeConte," *The Historian*, 38 (1976): 239-252.

Smithsonian Institution Libraries

Nineteen hundred seventy-seven was a year of steady growth for the collections, and of consolidation of the outstanding gains of recent years, such as the incorporation of the Dibner Library into the National Museum of History and Technology Rare Book Room; an opened and fully functioning National Air and Space Museum Library in its new quarters; increased use of the rapidly expanding Ohio College Library Center data base of major re-

search library holdings for on-line cataloguing, searching and locating sources of interlibrary loans; increased products from the Libraries' own automated operation, among them the first listing of the Libraries' desiderata; a four-year cumulation of the National Air and Space Museum Bureau Library index to aeronautical periodicals; expansion of reader services offered at the Radiation Biology Laboratory, National Zoological Park, and National Museum of Natural History; and a significant boost to the Libraries' conservation program.

The increase in numbers of books and journals, while critical to make up for past neglect, to allow immediate access to literature by the growing number of researchers at the Institution, and to accommodate new programs, at the same time compounds the Libraries' most serious problem—inadequate space. This year the Libraries attempted to meet this problem in a number of ways. Microform sets of journals have been acquired in increasing numbers. In some cases, they have replaced sets on active shelves, and those originals with important illustrations have been transferred to off-the-Mall shelving where retrieval is possible. The off-the-Mall shelving area itself (Smithsonian Institution Service Center) has been weeded of little-used materials and completely reorganized. Released space will accommodate more judiciously selected material and ease somewhat the crowded Mall shelves. The move of all journals from the fifth floor, National Museum of History and Technology Bureau Library, to space on the first floor has reduced somewhat the crowding on that Library's main fifth floor. In the National Museum of Natural History, the Division of Mammals' library collection was given a larger and more convenient area by the Museum. At the National Zoological Park, a handsome new library in the Administration Building has released library books from boxes and offices.

The crowding of people in unexpanding space has also been relieved somewhat in the Libraries' Acquisitions department. A study of space utilization and requirements led to a complete renovation of that office and to the installation of space-saving and more efficient equipment.

In July the Libraries lost its Director of ten years, Russell Shank, to the University of California at Los Angeles, where he became University Librarian. Under his leadership, the Libraries grew in

staff, size of collections, number of Bureau libraries, and in the uses of newer, more responsive technologies. Just before his departure, Dr. Shank became President-elect of the American Library Association.

In July Dr. Elaine Sloan, Assistant Director for Management and Development, left to become Associate University Librarian for Reader Services at the University of California, Berkeley.

Two in-depth studies were completed during the year: an examination of the serial system to improve management of the Libraries' 25,000 serial titles, and to make access to them easier and quicker for the user; and the problem of bibliographic control and organization of approximately 200,000 trade catalogues in the National Museum of History and Technology, with the aim of making this important and valuable source material more easily available for research. Recommendations resulting from both studies are under review by the Libraries.

During the year, a statement of present collecting practices for all Smithsonian Institution Libraries was compiled. It is the first stage in the drafting of a collection development policy.

The Libraries participated early in the Library of Congress' Cooperative Machine Readable Cataloging (COMARC) project. For COMARC the Smithsonian Libraries, while creating its own bibliographic record, converts Library of Congress cataloguing to machine-readable format, permitting the record to be added to the Library of Congress' immense MARC data base.

The temporary facility to house the Dibner Library of the History of Science and Technology, in the National Museum of History and Technology, and exhibit some of its treasures, was officially opened in October 1976. A reception to honor the donor, Dr. Bern Dibner, was attended by members and friends of the Dibner family. It was also attended by prominent rare-book librarians, collectors, dealers, and by Smithsonian representatives.

Several exhibits of Dibner material through the year featured fifteenth- and sixteenth-century editions of works by notable Greek scientists of the Athenian and Alexandrian Schools, and early illustrated books on chemistry, medicine, and natural history.

Staff of the National Museum of History and Technology Library and of Technical Services are preparing a short-title catalogue of the Dibner Library. This will be computer produced and

allow access to the incunabula and other rarissima of this collection from a number of approaches: author, title, printer, date, and place of publication, among others.

The National Air and Space Museum Library completed its first year in new quarters. Its staff has answered over 600 inquiries a month from the public, as well as from the curatorial and research staff. An "open house" was held for librarians and information scientists in the Washington and Baltimore areas and tours were organized for library-science schools and aerospace educators. The Early Birds of Aviation visited the Library during their annual meeting in Washington. Charles Dollfus, renowned balloonist, autographed the Library's copy of his rare *Histoire de l'Aéronautique*. The Librarian has begun to coordinate the organization and micro-filming of the research files. These files contain a wealth of historical documents on famous and little-known aerospace personalities; aircraft and engine photographs and drawings, space projects and vehicles; early ballooning and rocketry; industry histories; and other miscellaneous topics relating to aerospace.

The Bella C. Landauer collection of over 1,500 pieces of aeronautical sheet music was recently catalogued by a volunteer. The *New York Times* staff photographed several pieces of music about Charles Lindbergh for the *Times Sunday Magazine* of May 8, 1977, a special commemorative issue on the first transatlantic flight in 1927. Time/Life Books also photographed other aeronautical music for a forthcoming book on flight.

Mrs. Gardiner Fiske of Southern Pines, North Carolina, donated a folio of six hand-colored prints on the "Moon Hoax" designed by Italian artists in Naples in 1836. This outstanding gift shows the human population of the moon as presumed by Sir John Frederick William Herschel. Mrs. Fiske also donated a first edition of Barthélemy Faujas de Saing-Fond, *Description des Expériences de la Machine Aérostatique de MM. de Montgolfier*, Paris, 1783, which had another first edition bound with it: Jean-Claude Pingeron's *L'Art de Faire Soi-Même les Ballons Aérostatiques, Conformés à Ceux de M. de Montgolfier*, Paris, [1783].

The Radiation Biology Laboratory and National Zoological Park Bureau Libraries became fully staffed for the first time. The National Zoological Park Library moved to new expanded and attractive quarters in the Zoo's Administration Building and assimilated book

collections previously housed in various locations. The Library has featured some of its rarities in a small exhibit case and is probably the only library anywhere to have a bejeweled elephant anklet on permanent display. Its collection of "Zooiana" has been organized and is beginning to grow again.

Concurrent with the opening of the Cooper-Hewitt Museum in October 1976, the Picture Library reopened to the staff, and to the public on an appointment basis after a three-year period of inactivity. During the winter, the book collection, which had been in storage for four years, was delivered to the new stacks.

The same week in which the Museum opened, the American Society of Interior Designers formally donated to the Museum its library of about 2,000 items, along with a contribution for servicing this collection. *House and Garden* magazine, in November, delivered its Color Archives to the Library. A number of other large gifts helped build the collections during 1977, among them a donation of books by Alison Harwood, including a copy of A. J. Downing's *The Architecture of Country Houses*, 1850, one of the most important works on nineteenth-century American architecture.

Smithsonian Institution Traveling Exhibition Service

This twenty-fifth anniversary of the founding of the Smithsonian Institution Traveling Exhibition Service saw the 1,000th exhibition begin its tour. At the same time, special program areas, given impetus during the Bicentennial, were incorporated into SITES' regular program. The Bicentennial program staff combined with the science coordinators to become the American Studies Office. The "International Salute to the States" program continues extending SITES' important work with international exhibitions. Physically, SITES offices were relocated from Barney Studio House to the Arts and Industries Building, consolidating the staff on one floor for the first time.

SITES produced twenty-eight new titles, or forty-four new exhibitions, counting duplicates and additional versions. Of these, twelve opened in Washington, D.C., nine of which were shown in Smithsonian museums, including "Belgian Gunmaking" at the National Museum of History and Technology, "22 Polish Textile

Artists" at the Renwick Gallery, and "Treasures of Cyprus," "Rails of the World: Paintings by J. Fenwick Lansdowne," and "Locks from Iran: Pre-Islamic to Twentieth Century" at the National Museum of Natural History.

Among the new American Studies exhibitions beginning their tours in 1977, two were funded from the Smithsonian Institution Bicentennial program: "America's First Ladies" and "And Now a Message . . . A Century of American Advertising, 1830-1930." "The Frederick Douglass Years" and "Black Women: Achievement Against the Odds" were produced by the Anacostia Neighborhood Museum with SITES staff authoring materials for supplementary publications. Other new American Studies exhibitions included "Folk Art and Crafts: The Deep South," "North American Indian Baskets," and "Space Art from the U.S.S.R."

Exhibitions from foreign sources accounted for nearly half of the new exhibitions in 1977. Among these were "An American Inspiration: Danish Modern and Shaker Design," "Hungarian Art Nouveau," "The Human Form: Sculpture, Prints and Drawings by Fritz Wotruba," and "Salzburger Feltspiele!" New exhibitions in the general program included "Bridges: The Spans of North America," "America Underfoot," "Rails of the World: Paintings by J. Fenwick Lansdowne," and "World Print Competition 77."

At the end of the year, SITES was negotiating for thirty-three new exhibitions from sources as diverse as various Smithsonian bureaus, United States museums and private lenders, and foreign governments and museums. Among major exhibitions in the planning stages are "Impressions/Expressions: Black American Graphics," "Kings, Heroes, and Nomads: Pictorial Rugs from the Tribes and Villages of Persia," "Louis M. Eilshemius" in the Hirshhorn Museum Collection, and "Treasures of Belgian Jewelry."

SITES' annual catalogue of exhibitions, *Update*, was issued in April and listed 113 new exhibitions. A quarterly newsletter, *Siteline*, introduced in January 1977, highlights SITES exhibitions and their exhibitors. *Siteline* is mailed out to the 6,000 institutions on SITES' mailing list. Both *Update* and *Siteline* are written, edited, and published by SITES staff.

SITES' publications program was particularly active. Supplementing new exhibitions were fourteen publications, including major catalogues such as *America Underfoot: A History of Floor Cover-*



Canadian Ambassador Jack H. Warren opens Smithsonian Institution Traveling Exhibition Service's exhibition "Rails of the World: Paintings by J. Fenwick Lansdowne" at the National Museum of Natural History while Secretary Ripley looks on. *Below:* Iranian Ambassador Ardeshir Zahedi with the head of the Chinese liaison office admires the largest lock in "Locks from Iran" exhibition at the opening at the National Museum of Natural History. This is another of the many exhibitions being circulated by the Smithsonian Institution Traveling Exhibition Service.



ings from Colonial Times to the Present, The Human Form: Sculpture, Prints and Drawings by Fritz Wotruba, Locks from Iran: Pre-Islamic to Twentieth Century, and Treasures of Cyprus.

Several innovations were introduced in the educational program. Exhibitors scheduled to receive the show were invited to Washington, D.C., for a workshop on "Belgian Gunmaking" while the exhibition was shown at the National Museum of History and Technology. A similar workshop was held in relation to "Treasures of Cyprus." Roundtable discussion groups consisting of outside advisors helped SITES to plan content for brochures being prepared for "America's First Ladies" and "Images of Aging in America." Suggestions for curriculum development using SITES exhibitions with school programs were devised by the Office of American and Folklife Studies.

SITES continued its cooperation with George Washington University's Museum Education program, and staff members attended and participated in various national and regional conferences. In addition to travels to cities throughout the United States to negotiate for exhibitions and inspect those on tour, the staff traveled to France, Belgium, The Netherlands, Italy, Canada, Hungary, Finland, Russia, and Poland, for exhibition development purposes and to attend international museum meetings.

Totals for period October 1, 1976, through September 30, 1977

Number of bookings	790
Number of states served	49
Estimated audience	6,464,000
Exhibitions (including duplicates) listed in last <i>Update</i> (catalogue of SITES exhibitions)	213
Exhibitions produced for tour during the year (including duplicates and additional versions)	44

*Exhibitions beginning tours October 1, 1976, through
September 30, 1977*

- America Underfoot: A History of Floor Coverings from Colonial Times to the Present
- America's First Ladies (3 duplicates)

An American Inspiration: Danish Modern and Shaker Design
And Now a Message . . . A Century of American Advertising 1830–
1930 (3 duplicates)
Arne Jacobsen: Danish Architect and Designer
Artists, Authors, and Others: Drawings by David Levine
Belgian Gunmaking and American History
Black Women: Achievement Against the Odds (4 duplicates)
Bridges: The Spans of North America
A Cartoon History of United States Foreign Policy 1776–1976 (3
duplicates)
Divine Favors, Human Vows: Milagros from Puerto Rico
Folk Art and Crafts: The Deep South (3 duplicates)
Folk Woodcuts of Brazil's Northeast
The Frederick Douglass Years (6 duplicates)
The Hidden World of Misericords
The Human Form: Sculpture, Prints and Drawings by Fritz Wotruba
Hungarian Art Nouveau
Images of Old Age in America
Locks from Iran: Pre-Islamic to Twentieth Century
North American Indian Baskets
Oliphant: Paintings and Cartoons
Rails of the World: Paintings by J. Fenwick Lansdowne
Salzburger Festspiele!
Space Art from the U.S.S.R.
Terminal, Station and Depot
Treasures of Cyprus
22 Polish Textile Artists
World Print Competition 77: Selections from the Exhibition



The Anacostia Neighborhood Museum observed its tenth anniversary on September 15, 1977. Opening ceremonies ten years earlier, on September 15, 1967, are shown above, with Secretary Ripley listening as Alton Jones, head of the Anacostia Museum's Advisory Council, addresses the audience. *Below:* Secretary Ripley addresses friends and well-wishers at the Museum's tenth anniversary celebration.



PUBLIC SERVICE

THERE HAVE BEEN SEVERAL organizational changes in Public Service. The Folklife Unit, for the past ten years a part of the Division of Performing Arts, was reassigned to the Office of American Studies, under the Assistant Secretary for History and Art. The Office of Public Affairs was moved to the newly created Office of Coordinator of Public Information.

A major effort in 1977 was the Publishing Task Force, which was set up under the supervision of James Page and charged with the responsibility of examining whether it would be feasible for the Institution to enter into a serious commitment to the publication of books which would appeal to a broad general public. The methods used by the Publishing Task Force to accomplish their goal included such things as test mailings and market surveys. The result to date is the publication of a new book about the Smithsonian called *The Smithsonian Experience*. The book is being offered for sale primarily through the National Associates. With over 300 photographs, many of them in color, and fascinating accompanying text, it will provide enjoyment and enlightenment to thousands of people. This program is monitored closely by the Regents.

Another venture of a similar nature is the development and production of a recorded collection of the work of superb jazz performers and performances; it is the only collection of its kind in existence and, thus, has long merited the kind of marketing attention it is now receiving. Musical historians and critics, jazz buffs, and jazz lovers, as well as people who simply love good music well performed and faithfully recorded, have acclaimed this collection.

Telecommunication has opened new windows to a widespread public by laying the groundwork for two possible television series to be carried over the Public Television Network. One of these is

currently being test-marketed, while the other is in a more embryonic stage of development. Much credit is due to the National Associates Board for its supportive interest in this outreach program.

Anacostia Neighborhood Museum

On September 15, 1977, the Anacostia Neighborhood Museum celebrated its tenth anniversary with a reception held at the Museum. Exactly ten years earlier, Secretary Ripley had predicted that the opening of the Museum would prove "truly an important event in the history of museums. Together," he had said, "we must continue to explore the seemingly limitless possibilities that this discovery calls out to us." On September 15 of this year, with Museum Director John R. Kinard and other dignitaries, the Secretary took part in the celebration of that exploration.

Situated in the Anacostia section of southeast Washington, the Anacostia Neighborhood Museum represents the Mall-based Smithsonian Institution to area residents who might otherwise have no contact with this aspect of the cultural life of the nation's capital. Its programs and exhibitions are designed for the needs and interests of the Anacostia community, yet as a museum of the Smithsonian its exhibitions reach national and even international audiences. Two examples of such exhibits are "Blacks in the Westward Movement" and "The Frederick Douglass Years" which, through the Smithsonian's Traveling Exhibition Service, have traveled in the past two years to museums, libraries, and college galleries in over thirty states. A third show, "Black Women: Achievement Against the Odds" was designed in the Museum's Exhibits Design and Production Center and is also circulated nationally by sites and internationally through the United States Information Agency.

In its effort to establish itself as a center for ethnic studies, the Museum has begun an acquisition program in its Research Center. The Museum has also encouraged graduate students and scholars to participate in its internship programs. In the past year, two students—one from Sierra Leone, West Africa, the other from the Texas State Historical Commission—gained practical experience and college course credits while working in the Research Center.



Congresswoman Shirley Chisholm is the first speaker in the Minority Women Speak Lecture Series launched under the auspices of the Anacostia Neighborhood Museum's Education Department. *Below:* Children visiting the Museum intensify that learning experience at a learning center operated by the Education Department.



Believing that the Smithsonian has a significant role to play in attracting minorities to employment opportunities in major museums around the country, seven trainees have completed the first phase of their participation in the Anacostia Neighborhood Museum's exhibits training program. Chosen from one hundred applicants, these seven trainees spent six weeks learning such skills as exhibit design and fabrication and silk-screening followed by ten weeks of training in other museums of the Institution. They attended seminars, lectures, and workshops conducted by Institution scholars, and other professionals from the private sector. They are presently being placed in museum-related jobs in the Washington area. Three other trainees received jobs early in the program. Invaluable experience was gained as trainees were involved in the production of the Museum's major exhibit for 1977, "The Anacostia Story 1608-1930."

"The Anacostia Story" opened in March 1977. It was accompanied by a 158-page catalogue and narrative history which was published by the Smithsonian Institution Press a month earlier. Both the exhibit and the catalogue were the culmination of four years of effort by the Museum's staff. Members of the Anacostia community played an important role in the creation of "The Anacostia Story," donating artifacts, books, photographs, and other memorabilia, but, even more importantly, donating their time and their memories of Anacostia's rich history. These recollections were recorded and now form the nucleus of the Museum's oral history archives. Such community involvement in the production of a major exhibit distinguishes the Anacostia Neighborhood Museum from all other Museums in the Smithsonian complex.

Still another outgrowth of work on "The Anacostia Story" was the development of the Anacostia Historical Society. Composed of over two hundred Anacostia residents, during the past year the Society has sponsored lectures and other events in an effort to revive old Anacostia's cultural traditions. The Society continues to be one of the main links between the Museum and the Anacostia community.

Other ties between the Museum and area residents have been established by the Education Department, which conducted a variety of workshops and seminars during the past year. Audiences for both ranged from preschool teachers to college groups to groups

of children. The Department launched its "Minority Women Speak" lecture series with a presentation by Congresswoman Shirley Chisholm and, with the aid of a museum intern, established a learning center for groups visiting the Museum. With the Research Center and Exhibits Center, the Education Department continued over the past year "to explore the seemingly limitless possibilities" that the Anacostia Neighborhood Museum offers.

Division of Performing Arts

To open its eleventh year of presentations, the Division of Performing Arts (DPA) produced an evening of the music of Duke Ellington as part of the United States in the World International Conference. Performed by members of the New York Jazz Repertory Company, the concert featured the Ellington masterpiece, *Black, Brown and Beige*.

The 1976-1977 winter concerts were organized in eight series: Jazz Heritage, Jazz Connoisseur, Country Guitar, The Blues, American Popular Song, Theater Chamber Players, Music from Marlboro, and a series in conjunction with the Division of Musical Instruments (DMI) of the Museum of History and Technology.

Within these series, artists such as Tony Bennett, Willie Dixon, Vic Dickenson and Benny Morton, Art Blakey, Les Paul, Leon Fleisher, the Viola Da Gamba Trio of Basel, and some sixty others, performed intimate and informal concerts, free workshops, and open rehearsals offering a rich sampling of America's diverse musical heritage.

Scaling down from the massive Bicentennial Festival of American Folklife, the Division turned toward the Museums on the Mall to find a new presentational format.

On the occasion of the 1977 Inauguration of President Carter, the Institution was asked to produce events that would contribute to the general festivities and that would be free and open to the public. The Division of Performing Arts, working with the Museum of History and Technology, Museum of Natural History, Air and Space Museum, Hirshhorn Museum, National Collection of Fine Arts, and National Portrait Gallery, produced eighty-two con-

certs in five days (January 18-22) that were held in informal spaces. The musical range, from the Sambistas de Rio to Japanese koto music, from The Seldom Scene (country music) to Sweet Honey in the Rock (contemporary Black ballad singing), offered the familiar and the exotic. Crowds of over 130,000 attended the events and reacted with enthusiasm. Feedback from museum directors and staff suggested that the music in the galleries served to enhance both the collections and the performances.

Drawing upon this experience, the Division was asked by the Museum of History and Technology to produce live entertainment for a two-week Spring Celebration, coinciding with the Easter vacation break and Cherry Blossom season. Performances were held at the Mall entrance to the Museum and around the Pendulum area, and concentrated on presentations of talent from within the Greater Washington area.

For the Fourth of July weekend, the Division, again working with the Museum of History and Technology, offered an old-fashioned Independence Day Celebration, complete with high-wheel bike riders, clowns, mimes, brass bands, old-fashioned social dancing, and a special appearance by Uncle Sam. Press coverage stressed the timeliness of such nostalgic presentations.

Increasingly in the 1976–1977 season, the Division worked with other areas of the Institution to present performances and special events. Programmatic liaison ranged from producing full events for the Museum of History and Technology to producing a special weekend of twentieth-century piano music for the Hirshhorn Museum, to production and publicity support for the National Associates' outreach program. Together, the Division of Performing Arts, the National Smithsonian Associates, and the Division of Musical Instruments produced the tour of the Smithsonian Chamber Players, presenting twenty concerts and twenty-one workshops for National Associates in Denver, Detroit, Milwaukee, Minneapolis, Peoria, Portland, and Seattle.

Such programs have two goals: to add meaning and context to the exhibits and special events, and to stimulate public awareness of and interest in the traditional activities of the museums.

The eighth year of the DPA-operated Puppet Theater featured the Nicolo Marionettes as the resident company, with productions of *Around the World in 80 Days*, *Peter and the Wolf*, *Beauty and the*



Country, blues, gospel, and American popular songs filled the air at the Museum of History and Technology during the Spring Celebration which coincided with cherry blossom time in Washington. Here, local songstress Ronnie Wells receives a bouquet for her performance. *Below*, The Smithsonian Chamber Players with James Weaver, Director, performed at the Smithsonian and on a National Associate tour featuring concerts of American Music of the Federal Period.





Teachers study colonial objects during Office of Elementary and Secondary Education's workshop on museum teaching methods. Below: Teachers work with natural history specimens during a recent methods workshop sponsored by the Office of Elementary and Secondary Education.



Beast, and *The Magic Flute*, which music critic Irving Lowens reviewed as working better with puppets than with real people.

The African Diaspora Program, the area of DPA concerned with black cultural materials, conducted several educational and cultural missions. A project with the Arlington County Humanities Program took stories, songs, and other black American cultural materials into fourteen schools in the County. Phase II of this project, co-sponsored by the University of Virginia, offered a graduate-level course taught by the African Diaspora Staff and Advisory Committee on Arts in the Classroom. Dr. Bernice Reagon was program director for a pilot project, a Festival in the Georgia Sea Islands, featuring Georgia black American cultural traditions, on August 20 and 21. Mrs. Rosie Hooks was a member of the United States delegation to the Second World Black and African Arts Festival in Lagos, Nigeria, and later was responsible for the Washington component of a national tour of a cultural mission from Gambia. Dr. Reagon was invited by the Government of Cuba as a member of a cultural mission of black artists and scholars, and subsequently organized the Smithsonian reception for Los Papines, the first cultural group to come from Cuba since the revolution.

Office of Elementary and Secondary Education

During fiscal year 1977 the Office of Elementary and Secondary Education (OESE) continued to grow with new programs and in new directions.

Art to Zoo—a four-page publication to promote the use of museums, parks, libraries, zoos, and other community resources—was distributed to over eight hundred teachers nationally, and prompted many favorable comments from readers. “*Art to Zoo* is just marvelous!” writes a fourth-grade teacher in Pittsfield, Massachusetts. “Sometimes I feel that I am stuck in a rut and have no imagination at all . . . then something like this comes in the mail and I feel rejuvenated and alive again.” In conjunction with this publication, OESE’s first regional teachers’ workshop was offered in Lancaster, Pennsylvania. Over seven hundred teachers from two school systems joined OESE and thirteen cultural institutions in the

Lancaster area for a day-long series of workshops, demonstrations, and exhibits. During the 1977-1978 school year such workshops will continue, and the *Art to Zoo* mailing list will be increased in size to include 30,000 teachers.

In collaboration with the National Portrait Gallery, OESE staff worked with four Washington-area schools to help third- through sixth-graders set up classroom museums on subjects relating to their curriculums. These subjects were: Family History, Greek Art and Architecture, The Animals of Maryland, and The Civil War. The project has been thoroughly documented; one result will be a slide package for national distribution, showing how others can create—with maximum educational profit—a full-fledged museum in their classrooms from materials readily at hand.

On the local level, in keeping with its responsibility to encourage cooperation and exchange of information among the Smithsonian education offices, and between those offices and the District of Columbia schools, OESE continues to offer a number of programs that have proven successful in the past. The first of these involves two publications designed specifically for a local audience—*Let's Go* (a monthly newsletter) and *Learning Opportunities for Schools* (an annual brochure)—which inform teachers of the ever growing variety of Smithsonian services available to young people and suggest ways of using museums as educational resources. These publications are sent free to over thirteen hundred area schools.

Also especially for local teachers is "Teacher's Day," held annually. This year, Teacher's Day brought more than a hundred Washington-area teachers and Smithsonian education staff together for an informal program of special activities, including an introduction to educational materials developed by the Education Office at the National Zoo.

Local teachers are also reached through an OESE workshop and seminar program, now in its sixth year. During fiscal 1977 approximately two thousand teachers participated in OESE-sponsored workshops and seminars, including three summer (1977) courses enabling the development of curriculum units based on Smithsonian resources. The workshops vary in length and format, but all are designed to help teachers use the Smithsonian and other community resources to maximum advantage in their classrooms.

As a result of a series of regular meetings with District of Co-

lumbia Public Schools' Superintendent Vincent Reed and his staff, members of the Smithsonian's education staff are now better able to meet the curricular needs of the District Schools. These meetings, which will continue during the 1977-1978 school year, have given the Office an opportunity to expand its programs into adult education, special education, and teacher workshops.

In 1977, OESE sponsored its third annual program for summer interns. This year Intern '77 brought twenty-six promising high school seniors from rural and inner-city communities to the Smithsonian to engage in learning and service projects. The students worked under the guidance of curatorial and technical staff members in various parts of the Institution. A grant from the DeWitt Wallace/Reader's Digest Scholarship Fund made this effort possible.

Other important OESE activities include: (1) the chairing of a special Smithsonian committee for handicapped individuals, which works to promote equal opportunities and access to exhibition galleries and education programs for handicapped visitors and employees; (2) a resource center, which lends to education staff throughout the Institution printed and audiovisual materials relating to museum education; and (3) a Docent Roundtable, which enables volunteer guides (docents) for the various Smithsonian museums to learn of the work of their colleagues and to discuss matters of common concern.

The OESE staff seeks to expand the scope and understanding of the professional museum educator, through participation in national and regional conferences and workshops. To this end, programs were presented at the Southeast Conference meeting of the American Association of Museums, an American Association of State and Local History workshop on Museum Education, and the Northeast Conference of the National Council for the Social Studies. OESE staff members also helped to plan and teach seminars on Docent Training, Museum/School Relations, and Museum Interpretation given at the Smithsonian by the Office of Museum Programs.

Office of Smithsonian Symposia and Seminars

To the spirited strains of the McLain Family Band of Berea, Kentucky, playing for the first time in public—in honor of Flag Day—



Facing page, upper: Mrs. Jimmy Carter speaks at the formal opening ceremony on June 14, 1977, of "Kin and Communities: The Peopling of America," the Smithsonian's sixth international symposium. In the foreground, Alex Haley, Dr. Margaret Mead, and Secretary Ripley await their turns to address the audience. Facing page, lower: Secretary Ripley and Senator Humphrey respond to enthusiastic applause after presentation of the Smithsonian's Joseph Henry Medal. Below: Members of the McLain Family Band, one of the nation's foremost bluegrass groups, which has toured the world playing to the delight of capacity crowds in some forty-five countries and which played at the opening of the symposium "Kin and Communities: The Peopling of America."



their rendition of *The Stars and Stripes Forever*, the Institution's sixth international symposium was inaugurated on June 14, 1977, at the Kennedy Center's Eisenhower Theater. Mrs. Jimmy Carter, Mrs. Walter Washington, Alex Haley, and Dr. Margaret Mead addressed a capacity audience prior to Secretary Ripley's presentation of the Joseph Henry Medal to Senator Hubert H. Humphrey for distinguished service to the Smithsonian as a former Regent. These opening ceremonies officially ushered in a sequence of events in connection with which Dr. Mead, the symposium's chairperson, stated:

"Families always have been part of some kind of larger community, and only rarely could they exist alone for any length of time. Is there any viable alternative to the family as a setting in which children can be reared successfully to become capable and responsible adults? Should we aim at some wholly new social invention?"

This was the issue addressed by the "Kin and Communities: The Peopling of America" program, spanning several years of development as an educational adjunct of the total Bicentennial period (1976–1979), wherein discovery and rediscovery of personal roots will help redefine one's own American experience. Highlighted in the formal souvenir program to the symposium were articles by Eli N. Evans, "How To Interview Your Grandparents," and by James W. Symington, "A Tale of Two Families (And One City)," to illustrate the living growth of American culture and how it has influenced our common history. Distinguished contributors to the symposium, in addition to the foregoing, included authors Elizabeth Janeway, *Man's World, Woman's Place*; Amaury de Riencourt, *Sex and Power in History*; Wyatt Cooper, *Families: A Memoir and A Celebration*; Edward B. Fiske, education editor for the *New York Times*; Bernard Bailyn; John Demos; and many others. In addition to the larger sessions at which formal papers were presented, there were colloquia, public panels, workshops, and working groups. Materials from all the meetings will be incorporated into a formal published volume to be edited by Allan J. Lichman and Joan Challinor, both of the Department of History, American University. A committee of some thirty national advisors served as counsel to the office in developing the overall activities.

The symposium week closed with an old-fashioned family-style picnic at the National Zoo, during which even a thunderous down-pour could not dampen the spirits of those enjoying the evening's camaraderie.

Supplementing the office's responsibilities on the Mall, the Director, Dr. Wilton Dillon, represented the Smithsonian at the conference on "Science and World Affairs" sponsored by the Pugwash Movement in August 1977 at Munich. Throughout the year Dr. Dillon also spoke before other outside groups, among them Teachers College, Columbia University, on behalf of the Institution and his own anthropological research into intergenerational education and the human life cycle.

Office of Telecommunications

In its first full year as a separate unit, the Office of Telecommunications, as the responsible division for all Smithsonian activities in television, radio, and films, moved forward on a number of projects. The Office developed and produced a new official film overview of the Smithsonian with Secretary Ripley as the host/narrator, and completed, in the role of co-producer, a film dealing with the National Museum of Natural History with Orson Welles as narrator. Also, the Office assisted in the production of a CBS-TV network special on the Pyramids, and negotiated rebroadcast for the NBC-TV network of the popular Smithsonian Special of the previous year, *Monsters! Mysteries or Myths?*

Two major projects designed for public television progressed to the point where one of them, a new version of *What in the World*, moved into the videotape pilot phase; and the other, *Smithsonian World*, a monthly television magazine, is in the stage of seeking an underwriter.

Among other activities, the Office produced a new 30-second television public service announcement patterned after last year's prize-winning Bicentennial "spots" for nationwide distribution; filmed and recorded for archival purposes many Smithsonian events; and fulfilled numerous requests from television, film, and radio producers for assistance with coverage of happenings throughout the

Institution. *Radio Smithsonian*, the Institution's national weekly radio program, continued its growth with a revised, expanded format, at the same time increasing its coverage to more than fifty stations.

Smithsonian Institution Press

During the year the Smithsonian Institution Press published 203 publications with federal appropriations totaling \$354,981.34, including such notable books as *The Thomas Eakins Collection of the Hirshhorn Museum and Sculpture Gardens*; *Americas: Decorative Arts in Latin America in the Era of the Revolution*; *Perfect Likeness*; *The Art Crusade*; *The Musical Instruments of Joseph Haydn: An Introduction*; and *The Anacostia Story*. Among the significant scientific monographs published by the Press were *The Walakpa Site, Alaska: Its Place in the Birnik and Thule Cultures*; *Traditional Pottery Techniques of Pakistan: Field and Laboratory Studies*; *Science and Instrument-makers: Michelson, Sperry, and the Speed of Light*; and *Comparative Ethology of the Large-spotted Genet (Genetta tigrina) and Some Related Viverrids*. In addition, the Press published *The Red Alga Polysiphonia (Rhodomelaccae) in the Northern Gulf of California* and is awaiting delivery from the printer of *Astronaut Observations from the Apollo-Soyuz Mission*, the first publications of the two new "Smithsonian Contributions" series which were initiated in fiscal year 1977—"Smithsonian Contributions to the Marine Sciences," and "Smithsonian Studies in Air and Space." The Press and the Superintendent of Documents shipped, on order and to subscribers a total of 167,000 publications including books, art catalogues, brochures, and miscellaneous items; 100 records were distributed.

In addition to these, the Press published and marketed nine trade books during the year, bringing its total inventory to 168,561 books valued at \$290,437 published with Smithsonian trust funds. Smithsonian best sellers in 1977 were *Zoobook*, *Rauschenberg*, *Washington on Foot*, *The Golden Door*, *Peoples and Cultures of Ancient Peru*, and *America as Art*.

External arrangements of interest have included a contract with Macmillan of Canada to distribute Smithsonian Institution Press

books in that country, an agreement with British Museum Publications Ltd. to co-publish a book on George Catlin's artistic and scholarly interest in American Indian pipes, acceptance by both the Book-of-the-Month Club and the Playboy Book Club of the Press' forthcoming *The Smithsonian Collection of Newspaper Comics* as one of their alternate selections, and selection by the National Wildlife Federation of *Zoobook* for their Christmas 1977 catalogue.

Noteworthy Press activities within the Smithsonian family have included publications for the Woodrow Wilson International Center for Scholars of the first of an important series, *Scholars' Guide to Washington, D. C. for Russian/Soviet Studies*, and substantial progress toward editorial and design completion of the Archives of American Art's massive *Bibliography of the Arts in America*, a unique scholarly achievement for which the manuscript alone will exceed 20,000 pages. A rewarding collaboration between the Press and the National Capital Planning Commission resulted in a publication of unusual significance—*Worthy of the Nation: The History of Planning for the National Capital*. This book, written by Frederick Gutheim, is the culmination of many years of preparation by the National Capital Planning Commission as one of its major Bicentennial projects.

A continuing flow of awards attested to the quality of Smithsonian and Smithsonian Institution Press books. Most notable was selection of *America as Art* as one of five finalists in the History Division of the prestigious National Book Awards. In addition, two Smithsonian Institution Press editors received 1977 National Association of Government Communicators Blue Pencil Awards, while two Press books, *The Golden Door* and *The Edge of the Forest*, were among the thirty university press books accepted on the basis of excellence in design for the Association of American University Presses' 1977 Bookshow, which is exhibited nationwide; *Zoobook* was awarded a gold medal.

Smithsonian Magazine

The official magazine of the Institution continued, in its seventh year, with increasing financial and critical success, to follow the

original instructions of the Secretary, which were to publish material in which the Smithsonian Institution is interested or might be interested. What follows are the important areas of subject matter with examples of outstanding articles.

Science (hard and natural): traveling faster than light; a two-part article on the nature and activities of the controversial Corps of Engineers; limb regeneration; the fight to save the porpoise; Southern Hemisphere telescopes which widen the field of astronomy; space shuttle; life in a DNA lab; articles (coal, water power, and solar cells) in three successive issues on vitally needed energy; a two-part article on the indispensable biosphere and the link, in the Western Hemisphere, between the Amazon and Mckenzie basins.

Art: national tour of King Tut exhibit; Alexander Calder, America's Matisse/Picasso; Thracian gold; France's new national museum, the Pompidou.

History: Joseph Needham's monumental series on China; two-part article on Supreme Court (living history); Pevsner's great mansions of England; construction of Lincoln statue; two-part article on Brady, the first great war (Civil) photographer.

A new circulation guarantee of 1,500,000 was established on March 1, 1977, up from a previous guarantee of 1,000,000 and an Audit Bureau of Circulation figure of 1,250,000 for June 1976. Advertising pages increased to 775 pages for the year ending June 30, 1977, as compared to 730 for the preceding year. Gains, not yet computed, were maintained up to the end of the new fiscal year, September 30. That *Smithsonian* magazine distribution is nationwide is shown by the fact that there are more Associate members in California than there are in the Washington, D.C., metropolitan area. Figures on magazine profits were released by the Secretary: more than \$2.9 million for fiscal year 1976.

The magazine became an integral part of the Cooper-Hewitt membership organization as it had previously become a benefit of Resident Association membership. It gave substantial assistance to the new *Woodrow Wilson Quarterly*. It cooperated with other divisions and departments in calling the attention of its public to the products of the Division of Performing Arts, Photographic Services, the Air and Space Museum, the Museum Shops, and the Smithsonian Press.

Smithsonian Resident Associates

The Smithsonian Resident Associate Program was established in 1965 by Secretary Ripley to provide the opportunity for residents of the greater Washington area to participate actively in the life of the Institution. The Program seeks to achieve this goal through an extensive range of quality educational activities that are consonant with the research, collections, and exhibitions of the Institution. These activities include classes in the arts, sciences, humanities, and studio arts; study tours within the Smithsonian bureaus and nearby complementary facilities, as well as pertinent overnight tours, lectures, symposia, seminars, film series, exhibition previews, outdoor festivals, art poster projects, and performing arts events.

The Program's focus throughout fiscal year 1977 was on maintaining the quality of its educational offerings and continuing to ensure efficient and thoughtful service to members. While no growth was sought, and no membership promotions utilized, the number of memberships rose to 44,000 as of September 1977, a net gain of about 3,500 over the previous summer. (Memberships may be categorized as individual, double, family, and contributing.)

The year was marked by an intensification of cooperation with Smithsonian bureaus as the Program sought to enhance the knowledge and appreciation of the Institution's collections, exhibitions, research, and curatorial interests. For example, the National Collection of Fine Arts was host to two member openings during the year: the walkthrough of the "Robert Rauschenberg Retrospective," and a preview of the exhibition "Painting and Sculpture in California: The Modern Era."

In addition to cooperating with Washington organizations, the Program works to foster civic awareness and interest in the immediate community of which the Smithsonian is part. One of the Program's long-range goals has been to engage the interests of a broader spectrum of Washingtonians and to make the Program accessible to a wider range of age, interest, and ethnic groups. The Young Associate scholarship program, now funded directly out of the Program's budget, enables some one hundred and fifty inner-city youngsters from thirty D.C. schools to participate tuition-free



Resident Associates tour historic Congressional Cemetery, where composer John Philip Sousa, Civil War photographer Matthew Brady, and seventy-five Congressmen and fifty-six Senators are buried. Historian Ruth Ann Overbeck led the walking tour. *Below, left:* Students in a Resident Associate studio art class learn techniques of figure drawing from life with instructor Ann Purcell (standing far right). *Right:* Kite flyers at the Resident Associate Program's Annual Smithsonian Kite Festival pose with a tetrahedral kite of the type with which Alexander Graham Bell experimented.



in Young Associate classes and programs each year. The Program is also currently working with the District of Columbia Board of Recreation to allocate tuition-free scholarships to Resident Associate adult classes for Washington residents who are now taking part in adult education classes in the public school system. In an effort to attract more blacks and more Spanish-speaking members, the Program has engaged Charles Hobson, Program Director, WETA radio, to develop programs and activities geared to minority interests.

The Young Associate Program extends the resources of the Institution to members' children (as well as scholarship children) through classes and special events. The Program offers learning experiences appropriate to specific age groups, ranging from four to eighteen. This year membership was extended to young people up to age twenty-one to enable college age dependents to attend family activities without the necessity of individual memberships.

There are almost six thousand family memberships, and special activities are regularly geared to family participation. The annual Zoo nights, the Boomerang and Kite Festivals, which were particularly well-attended this year, are family highlights, in addition to farm excursions, train trips, fossil digs, and canal trips. Over thirty family activities were scheduled in fiscal year 1977, not including special activities for the children of family members. As an example of the seriousness with which Young Associate courses are now regarded in the city, George Washington University extended course credit to students in a class on "Community Resources" for their participation as interns in Resident Associate classes for young people.

Over two hundred and fifty volunteers work for the Resident Associate Program on a regular basis, assisting at special events, monitoring classes, and performing office duties. The Program's volunteers frequently offer their time to other Smithsonian bureaus, as they did in June when they served as monitors for the Office of Smithsonian Symposia and Seminars' symposium on "Kin and Communities: The Peopling of America." Over one hundred and forty-five volunteers have been presented with certificates of appreciation, signed by Secretary Ripley, to offer further thanks for special help.

Visitor Information and Associates' Reception Center

The Visitors Information and Associates' Reception Center, now in its seventh year, continues to expand its role of providing information and service to the Institution, the public, and Associate Members.

Notable achievements in fiscal year 1977 include: the approval of the Center as the Institution-wide central registration point for behind-the-scenes volunteers; and the acceptance by the Museum of History and Technology administration of a proposal to appoint department/division public inquiry liaisons.

Increases in all visitor services provided by the Center are attributed to delayed Bicentennial visitations and the expanding popularity of Smithsonian attractions and activities.

Information Volunteers, currently numbering 350, continue to provide the human interface between the Smithsonian and visitors to the National Collections. Desk coverage in museums and galleries served by the Information Volunteer Program, between the hours of 10 and 4, seven days a week, netted 32.9 thousand hours of volunteer service. Orientation services were provided in the Associates' Lounge for approximately 135,000 members.

The "Castle" Docent Program has realized much of its potential this year in cooperation with the Associates' Travel Program. Weekly Sunday morning tours were offered to 2,100 participants in "Washington Anytime" weekend. Further expansion of the Program now enables the addition of tours for special events, when docents are assigned to each of the featured rooms in the "Castle." "A Victorian Evening at the Smithsonian," presented for the Contributing Membership on the first Sunday in May, was the first such event for the period-costumed docents.

Completing its second official year of operation, the Public Inquiry Mail sector experienced a 30 percent growth factor. The fifty-to-fifty ratio between public and member requests remains constant, as does the diversity of information sought. Information systems and ready reference files have been expanded and updated. Closer curatorial contacts were established to facilitate public queries regarding collections and exhibits, and the mail operations of other major institutions were examined and evaluated for future

application. New informational preprints were developed for response to frequently asked questions, allowing more time to process special requests. Through the hard work and dedication of staff and volunteers alike, the Institution's image as a reliable and thorough source of information continues to be reinforced through the mail, thus adding a new dimension to the understanding and knowledge of thousands of persons.

The Independent Volunteer Placement Service maintained a roster of staff projects and an active referral service for prospective volunteers. Some 24,000 hours of service were contributed by volunteers placed through this program in fiscal year 1977. Adults provide the primary resource of volunteer assistance, with a growing number of students assigned to short-term projects. Future plans for this program include specialized projects designed to provide broader service to the Institution.

From the Anacostia Neighborhood Museum to the National Zoological Park, Smithsonian volunteers continue to personify the diversity and richness of the National Collections.

The Smithsonian is indeed indebted to the 2,352 devoted individuals who have given so generously of their time and talents this past year. Together, some 216,985 hours of service have been amassed by these volunteers, working as docents, information specialists, and behind-the-scene staff assistants. The Smithsonian recognizes and commends this volunteer corps whose contribution so significantly amplifies the Institution's credo—"the increase and diffusion of knowledge."



Kjell Sandved, photographer with the National Museum of Natural History, demonstrates his camera equipment during a photography techniques session at the Denver Museum of Natural History, held under the auspices of the Smithsonian National Associate Program. (Photo by Ronda Barlow, Denver Museum of Natural History)

MEMBERSHIP AND DEVELOPMENT

THE INSTITUTION'S MEMBERSHIP program of the Smithsonian Associates was essentially designed for Washington area residents, until the spring of 1970 when publication of the *Smithsonian Magazine* began. As a principal benefit of membership, the monthly magazine so stimulated interest in the program as to increase the Smithsonian Associates to nearly 1,600,000 members across the country.

National Board of the Smithsonian Associates

The National Board of the Smithsonian Associates provides leadership to the National Associates Program, and constitutes an important network of informed leaders who care about and work for the Smithsonian Institution in communities all around the country. Under the leadership of its Chairman, Ambassador George C. McGhee, the Board met in Washington in the fall of 1976, and in Minneapolis in the spring of 1977.

Five new members were elected to the Board this year: Mrs. Jackson Burke, the Honorable William T. Coleman, Jr., and Messrs. Gaylord Donnelley, James M. Kemper, Jr., and Vernon Taylor, Jr. In addition, Mrs. Karl G. Harr joined the Board (ex officio) following her election as the new Chairman of the Smithsonian Women's Committee. To honor the nine original members of the Board, a new category—Honorary Membership—was created. The persons who will be so honored are Messrs. Richard P. Cooley, Joseph F. Cullman III, Leonard K. Firestone, Alfred C. Glassell, Jr., William A. Hewitt, Lewis A. Lapham, Francis C. Rooney, Jr., Merritt K. Ruddock, and

Thomas J. Watson, Jr. Subsequently, Mrs. Lyndon B. Johnson and the Honorable Nelson A. Rockefeller were also elected Honorary Members because of their frequent service to the Institution.

The remaining members of the National Board of the Smithsonian Associates are the Honorable George C. McGhee, Chairman, Mr. Robert O. Anderson, Mr. William S. Anderson, Mr. Harry Hood Bassett, Mr. Henry C. Beck, Jr., Mr. Keith S. Brown, Mr. Thomas M. Evans, Mr. Charles T. Fisher III, Mrs. David L. Guyer, Mr. Henry J. Heinz II, the Honorable John N. Irwin II, Mrs. Robert A. Magowan, Mrs. Robert S. McNamara, Mr. Scott McVay, Dr. Ruben F. Mettler, Mr. John R. Norton III, Mr. Charles M. Pigott, Mr. George S. Pillsbury, Mr. Arthur A. Seeligson, Jr., and Mr. James O. Wright.

Regional Program

As the Institution's membership program spread beyond the confines of the Mall to Associates who receive the magazine throughout the country, the vehicle for additional member involvement has been the Regional Program. This program offers a series of activities representing Smithsonian research and educational interests in selected cities across the country. During the past year, programs of up to two weeks in length were scheduled in Peoria, Milwaukee, Detroit, Seattle, Portland, Denver, and Minneapolis–Saint Paul. Approximately 157,000 Associates and members of local museums in these localities received invitations. Over 157 lectures, performances, exhibitions, and workshops were offered for which 34,000 members requested tickets.

The educational goal of the program, stressing a greater participation of members in museum activities around the country, was undertaken with the assistance of fifteen bureaus of the Institution and twenty-one co-sponsoring local organizations. Meaningful experiences were provided through innovative program formats, supplemental educational materials, and reading lists developed by the lecturers and the National Associate Program.

Two of the most successful programs were the Smithsonian Chamber Players performing for sellout audiences; and Kjell Sandved, National Museum of Natural History, presenting a research film on animal motility to "standing room only" audiences.

The impact of the program was felt locally, where as many as 400 new members were added to co-sponsors' organizations as a result of the program. A post-tour survey in one host city indicated that 98 percent of those questioned intended to return to the local museums, more than 35 percent planned to join the local museum, and over 84 percent felt that they had a greater understanding of the work and collections of the Institution.

The shared concern for an active, nationwide, museum-going populace, has fostered a strong cooperative spirit between the Smithsonian and local museums. As the outreach program has grown, the interplay between museums has encouraged the regional hosts to enhance Smithsonian offerings with locally planned special events and follow-up programs, using the Smithsonian program concept to provide continuing educational benefits for local members.

Additionally, the program has utilized the talents of its speakers not only for lectures to members, but also in dialogues with other museum professionals. During part of their visit the Smithsonian staff consulted with scientists in like disciplines, sharing ideas and discussing developments in their respective fields.

Associates Travel Program

During 1977, the Domestic Study Tours staff continued to provide members with educational travel experiences. Visits were made to such places as the Colorado River to study natural history, New Mexico to study the Pueblo Indian cultures, and Alaska to enjoy the wildlife of Mount McKinley. On all tours, small groups of members were accompanied by a Smithsonian representative and a curator who is a specialist in the topic of the tour.

More than 2,000 members participated in the popular "Washington Anytime" weekend during the year. Designed to give National Associates an opportunity to visit Washington and the Smithsonian any weekend during the year, the program, assisted by the Visitor Information and Associates' Reception Center, responded to a large number of members who wished to enjoy the city following the Bicentennial activities.

The new Foreign Charter Program, which is dedicated to the goal of providing educational and culturally oriented tours to a broad base of the Associates membership, continues to be successful. Each charter tour provides educational travel opportunities for 172 members. The tour is divided into six small groups of 28 or 29 members, each accompanied by a Smithsonian representative and a tour leader. Participating members receive educational tour bulletins, recommended reading lists, books, maps, special publications, and helpful information prior to departure. An optional two-day Pre-departure Program is also available. The program offers an orientation to the Institution, social events for meeting fellow travelers, and a series of lectures by curators and visiting specialists on history, culture, political and social life, and art and architecture of the country to be visited. Last year visits were made to England, Australia, Siberia, Mexico, Russia, Poland, and Turkey.

Contributing Membership Program

Contributing Members of the Smithsonian National Associates support the Institution's work through annual contributions of \$50, \$100, and \$500. In the past year, the membership doubled from 885 to 1,616 and maintained a renewal rate of 85 percent. Special events for Contributing Members included a "Private Viewing of the Treasures of Tutankhamun" in November and a "Victorian Evening at the Smithsonian" in May.

The James Smithson Society was created in 1977 to encourage and recognize major gifts to the Smithsonian Institution. This Society, which is the highest order of Contributing Membership, is comprised of two membership categories. Annual members are individuals who make unrestricted contributions of \$1,000 to \$24,999 in a given year. Life Members are those who give \$25,000 or more, either in monetary gifts or additions to the collections.

The first year of the James Smithson Society was extremely successful, with ninety-seven Annual and eighteen Life members. The Annual membership made possible the acquisition of Rembrandt Peale's important painting, *The Roman Daughter*, for the National

Collection of Fine Arts, and twenty summer intern scholarships for high school students through the Office of Elementary and Secondary Education. Life members' gifts covered a wide range of significant objects and collections to five Smithsonian bureaus, including ancient glass, gems, jade carvings, jewelry, paintings, drawings, stoneware, porcelain, a silver teapot, a nineteenth-century steam engine and monetary contributions.

The Smithsonian Institution gratefully acknowledges the generous support of the James Smithson Society 1977 Annual Members, Life Members, and the Contributing Members of the Smithsonian Associates, who are listed in Appendix 8.



Statue of Joseph Henry silhouetted against the towers and turrets of the Smithsonian Institution's first building, which was designed by James Renwick, Jr., and was built between 1847 and 1855. Joseph Henry was the Institution's first Secretary and served in that capacity from 1846 until 1878.

ADMINISTRATION

IN MAY 1977, THE AUDIT REVIEW COMMITTEE of the Board of Regents engaged the services of Phillip S. Hughes to study certain aspects of the Institution's management, and to provide the study, with his recommendations, to the Committee. Mr. Hughes, a distinguished civil servant and a former Deputy Director of the Office of Management and Budget, submitted his report to the Audit Committee on September 1, 1977.

The Hughes Report recommended the following: that the Institution provide more information to the Congress regarding the former's future plans for federal and trust funds; that it establish a five-year planning process; that, corollary to this, the Institution develop a comprehensive, descriptive list of its activities; that it establish and issue policies for the use of its trust funds; and that the position of Under Secretary, vacant since the death in 1976 of Robert A. Brooks, be filled. The Report was adopted by the Board of Regents, and implementation is currently underway.

On July 11, 1977, Lawrence E. Taylor assumed the newly established position of Coordinator of Public Information, reporting directly to the Secretary. Mr. Taylor is responsible for all aspects of public information, Congressional relations, and special events, functions which previously had been assigned among several other offices.

Financial Management

The Treasurer and his staff continued their oversight and administration of the financial assets of the Institution in addition to imple-

menting several important new programs designed to improve financial reporting, and budgetary and expenditure controls.

The Treasurer, working closely with the Investment Policy Committee of the Board of Regents, oversees the management of the endowment funds of the Institution by three professional advisory firms. Details on these funds and other financial resources of the Institution can be found in the Financial Report shown in the Statement by the Secretary. The Investment Accounting Division assists the Treasurer with the monitoring of the endowments and is also responsible for the short-term investment of current funds excess to immediate operating needs. This is accomplished through daily cash management and forecasting procedures to insure the highest possible return. The Division maintains various automated systems for the tabulation of investment data, performance evaluations of the three investment managers, and distributions of earned interest of funds of bureaus of the Institution.

During the year, the Office of Programming and Budget developed and implemented the Institution's first "zero-base" budget for fiscal year 1979, following the Office of Management and Budget's general guidelines. Each of the Institution's museums, bureaus, or offices receiving an annual appropriation reviewed its programs rigorously and assessed the impact of funding at various resource levels. A noteworthy feature of the zero-base budgeting system involved ranking of the Institution's programs in priority order across program lines.

The Accounting Division developed and instituted for fiscal year 1977 a new accounting system utilizing a greatly expanded key-to-disc data-entry system. One major contribution of this system is the consolidation of federal and trust processing. Until this year, separate systems were used to accomplish functions such as preparing vouchers, disbursing checks, and recording cash receipts. Centralization, in this case, has eliminated duplication of work effort, reduced numerous manual accounting functions, and has standardized the internal reporting process.

The Grants and Insurance Administration Division continued to provide administrative, management, and financial services to Smithsonian researchers receiving funds from granting agencies and to ensure that expenditures are in accord with the terms of the grants and applicable regulations. In addition, the Division was

active during the year in the administration of the Institution's comprehensive fine arts insurance coverage and in implementing new procedures to reduce losses.

Fiscal year 1977 saw greatly increased emphasis on control in the Museum Shops. New systems were implemented for providing better information to management and for controlling inventory. Financial results for the year were very satisfactory, making it possible for the Museum Shops to continue to share a portion of their revenue with various museums of the Institution. A new thirty-two-page catalogue, offering items representing or relating to the museum collections, was mailed to all Smithsonian Associates in September 1977, and early response looks extremely favorable. A new and highly sophisticated computer system has been developed to process incoming orders expeditiously.

The Product Development Program originated in 1972 as a means for visitors and nonvisitors as well to see and acquire various interpretations and copies of items in the Smithsonian. As part of this program, an agreement was reached during the past year with Imperial Glass, a division of the Lenox China Company, under which Imperial will develop several glass reproductions based on Smithsonian collections.

Under another agreement the Stieff Company introduced in fiscal year 1977 the "Susan B. Anthony gavel," a reproduction of the original in the Smithsonian. They also completed development of the "Adams Silverware," inspired by the dinner setting used by John Quincy Adams and his family.

The Belmont Conference Center, a 240-year-old manor house, with 365 surrounding acres of lawns, forests, and fields, located between the District of Columbia and Baltimore near Interstate 95, provides an attractive, secluded, and gracious retreat unusual in the Eastern Corridor. Since its opening in 1967, conference operations have been directed toward the needs of small groups which require a location unencumbered by the normal intrusions associated with offices. Belmont can accommodate twenty-four in-house residents, with facilities for ten to twelve additional guests, speakers, or observers for meals and meeting sessions. This limiting size factor ensures that each conference has the undivided and individual attention of the entire staff, as well as the opportunity for unusually close interaction within the meeting group itself. Of the eighty or

so meetings which Belmont hosts in a year, approximately 60 percent are from federally-funded agencies; the balance include those from foundations, universities, and other philanthropic organizations as well as private industry.

Support Activities

During the past year, significant improvements were made to provide timely administrative support throughout the Institution.

The Office of Computer Services installed a new computer system to meet the growing demand for additional capabilities.

The Equal Opportunity program, now including provisions for the handicapped, continued to emphasize the Institution's commitment to equality in all employment practices. The Civil Service Commission approved the Smithsonian's 1977 Affirmative Plan of Action as well as the Upward Mobility Program. In addition, the Smithsonian received special recognition by the Civil Service Commission for timely processing of discrimination complaints.

The Office of Facilities Planning and Engineering Services completed 158 projects, valued at 3.8 million dollars, and initiated 100 other projects, which will be completed as funds become available. Longer range planning continues to be emphasized.

The United States Patent Office assumed responsibility for the international transfer of patent specifications, a task performed by the International Exchange Service (IES) for many years. This transfer has enabled IES to devote more time to other important priorities.

The Office of Personnel Administration completed the Trust Fund Personnel Handbook during the year, and it is now approaching final stages of review by key Smithsonian officials. The handbook is the first compilation of policies regarding Trust Fund personnel management.

The Office of Plant Services continued to make progress toward energy conservation and reduction and employed an energy conservation officer to implement an effective utilities conservation program.

The Office of Printing and Photographic Services improved the overall quality of photographic and duplicating support throughout

the Institution, upgraded original photographic work produced in the studios, and modernized and upgraded its laboratory facilities in the National Museum of History and Technology. Greater emphasis was given to producing photographic materials for the public, including slide sets and original photography of key museum exhibits.

The Office of Protection Services' three years of study, planning, and preliminary work culminated in July 1977 in the establishment of the Smithsonian's own control center for monitoring fire and burglar alarms at Smithsonian's facilities in the Washington, D.C., area. The new center, located in the original Smithsonian Institution Building and staffed twenty-four hours a day, assumes and expands the functions formerly performed by an outside organization at a remote location and outside the Institution's control.

SMITHSONIAN INSTITUTION WOMEN'S COUNCIL

The Smithsonian Institution Women's Council continues to bring women into the mainstream of Smithsonian activities. During the past year, members participated in various training and career development programs, including time management, labor-management relations, and employee-performance evaluation.

The Programs Committee sponsored a variety of films and seminars on topics such as women's history, obtaining a credit rating, and rape crisis, and held the first in a series of panel discussions highlighting the unique careers of women in the Smithsonian. The Publicity Committee was instrumental in preparing a photographic exhibit in the Employee Gallery of the National Museum of Natural History based on past and present activities of the Women's Council.

In an effort to improve communications within the Smithsonian, the Women's Council began distributing a periodic newsletter about training, career opportunities, personnel and Civil Service Commission regulations and policies, and committee activities and accomplishments.



France's Fernand Braudel, one of the world's great historians and a Wilson Center Fellow, chatting with Director James Billington. (Photo by *The New York Times*)

WOODROW WILSON
INTERNATIONAL CENTER
FOR SCHOLARS

JAMES H. BILLINGTON, DIRECTOR

APPROACHING ITS SEVENTH ANNIVERSARY, the Woodrow Wilson International Center for Scholars, recognized throughout the nation and the world as a scholarly institution of major importance, has become a distinctive, living memorial to a former president.

The Center continued to commemorate, through its residential fellowship program of advanced research and communication, both the intellectual depth and the public concerns of Woodrow Wilson.

The Fellows

The thirty-five fellows conducting individual research are the core of the Center. The quality and diversity of the fellows and their published works continue to grow. The number of applications from across the United States and around the world increases each year. As of September 1977, 236 fellowships had been awarded in open international competition since the Center was established—about 60 percent to American scholars, the rest to applicants from some thirty-eight foreign countries. All told, the fellows have come from some 115 different universities and scholarly institutions.

The new head of the Agency for International Development (AID) John Gilligan; the new head of our country's Law of the Sea negotiating team, Elliot Richardson; the new superintendent of West

Point, Andrew Goodpaster; and the new head of the Environmental Protection Agency, Douglas Costle, were all Wilson Center fellows. Other fellows this past year included a former head of state from Latin America, a deputy head of state from Africa, and close advisers to the prime ministers of England and Japan. Fernand Braudel of France, one of the world's greatest historians, made his first visit to America in many years as a Center fellow in 1976. Mexico's distinguished writer, Carlos Fuentes, was a fellow. The famed Russian poet Andrei Voznesensky arrived in late 1977, to work on recent American poetry. Last year, the equally diversified group of American fellows included thirty-one American college professors from a variety of departments in twenty-five different universities. All are at the Center to produce a major publishable scholarly work. The year also produced a marked increase in applications and a doubling of selections from beyond the Boston-Washington corridor.

The Program

The Board of Trustees has consistently felt that the Center would profit from having some special areas of emphasis that would provide focus within its overall program without tying it into the rigidities of departmental structures or a permanent faculty. As a result, the Center currently has small special programs in Russian and Soviet Studies, Latin American Studies, International Security Studies, and Resources and Environment.

The Center is unique among institutes for advanced study in its commitment to communicate between "the world of learning and the world of public affairs." Accordingly, it sponsors an extensive program of meetings, informal discussions, formal colloquia on work in progress, and evening dialogues. Most of these are open to the concerned public affairs community. During the two years that the Russian program has been functioning, for instance, there have been 20 conferences attended by a total of more than 1,000 people. The Latin American program, which began earlier this year, has already had twelve meetings of different kinds.

The Center thus offers public officials and others, on occasion, a

chance to take a step back from today's immediate crisis to join with scholars in supplying perspective and wisdom.

The Center recently added a special series of dialogues on such subjects as the relationship of religion and politics—which will lead to a series of meetings involving members of Congress—and on national educational policy, which has brought the last five United States Commissioners of Education together periodically at the Center. The Center also organizes special events such as the recent national conference on government reorganization that brought 124 participants from state and local governments and universities all over the country to discuss the question of government reorganization with such speakers as Richard Pettigrew and Jack Watson from the White House, United States Representative John Brademas, and former Health, Education and Welfare Secretary Caspar Weinberger, as well as co-chairmen Governor Dan Evans of Washington and Mayor Kenneth Gibson of Newark.

Another part of the Center's "switchboard" function involves bringing people in touch with scholarly materials they might not otherwise know about. The Center has undertaken a series of scholars' guides to the immense archival resources of the Washington area. The first of these volumes, a comprehensive guide to the resources for Russian and Soviet studies in Washington, is scheduled for issuance in October 1977. Work is currently progressing on similar guides for the study of Latin America, Africa, East Asia, and film and television resources.

Most important has been the establishment of the *Wilson Quarterly*, a national review which digests and presents in plain English to a broad, lay audience some of the more important insights and ideas, not just of the Center but of the entire world of higher scholarship. Within one year, it has become perhaps the most widely read quarterly in the English-speaking world with close to 90,000 paid subscribers.



President Carter, Ambassador Andrew Young, and Roger L. Stevens at the dedication of the Kennedy Center African Room, April 1977. (Photo by Richard Braaten)

JOHN F. KENNEDY CENTER
FOR THE PERFORMING ARTS

ROGER L. STEVENS, CHAIRMAN

IN PROVIDING FOR THE ESTABLISHMENT of the National Cultural Center, which subsequently became the John F. Kennedy Center for the Performing Arts, Congress specified that the institution should:

1. Present classical and contemporary music, drama, dance, and poetry from the United States and abroad;
2. Present lectures and other programs;
3. Develop programs for children, youth, and the elderly, specifically for their participation, education, and recreation; and
4. Provide facilities for civic activities.

Implicit was the desire that the Center serve not only the nation's capital, but the entire country as a national showcase and a force for arts advancement and general enrichment.

In six years of operation, the Kennedy Center has become one of the most active arts institutions in the world. More than 6,100 performances have been presented to a total audience of 9.6 million people. Comprehensive educational and public-service programs have been developed for the Washington community and the nation as a whole. And, as a national memorial, the Center has welcomed nearly 20 million visitors.

The 1976-1977 season was marked by a continued commitment to the artistic excellence of performance programming and by significant expansion of the Center's public-service emphasis.

Performing Arts Programming

The Kennedy Center's three major auditoriums, the 2,750-seat Concert Hall, the 2,300-seat Opera House and the 1,150-seat Eisenhower Theater, were kept in full operation throughout 1976-1977 and audience attendance for the year's 1,000 performances of dance, music, drama, and musical comedy totaled nearly 1.6 million. In addition, the 224-seat American Film Institute (AFI) Theater presented more than 650 films to an audience of 100,000.

DRAMA AND MUSICAL COMEDY

During the Center's first six seasons, 3,444 performances of drama and musical comedy have been presented in the Eisenhower Theater and Opera House. Of the 107 productions staged, 68 have been produced, coproduced or made possible financially by the Center itself.

The 1976-1977 theater season featured 512 performances of 16 major productions and attracted a total audience of 625,000. Drama productions included William Luce's *The Belle of Amherst*, starring Julie Harris; the American premiere of Harold Pinter's *No Man's Land*, with Sir John Gielgud and Sir Ralph Richardson; Tom Stoppard's *Dirty Linen: G. B. Shaw's Caesar and Cleopatra*, starring Rex Harrison and Elizabeth Ashley; the American premiere of Stoppard's *Travesties*, with John Wood; Hal Holbrook's *Mark Twain Tonight*; the world premiere of Arthur Miller's *The Archbishop's Ceiling*, with John Cullum and Bibi Andersson; Henrik Ibsen's *The Master Builder*, starring Richard Kiley and Jane Alexander; Alan Ayckbourn's *Absent Friends*, with Anne Jackson and Eli Wallach; and the American premiere of Aleksei Arbuzov's *Do You Turn Somersaults?*, with Mary Martin and Anthony Quayle.

Complementing the season of Western drama was the September engagement of the Grand Kabuki of the National Theatre of Japan. The company, foremost conservator of Kabuki's more than 350-year-old tradition, presented excerpts from *Yoshitsune Senbon Zakura* and *Kurozuka*, both featuring Ennosuke Ichikawa III, Japan's leading Kabuki actor.

Completing the season were productions of five musicals—*Pippin*, which originated in the Opera House in 1972, *Shenandoah*,

and three new works: *Music Is*, by George Abbott, Richard Adler and Will Holt; *The Baker's Wife*, by Joseph Stein and Stephen Schwartz; and *Annie*, by Thomas Meehan, Charles Strouse, and Martin Charnin.

Annie, in which the Center participated as a co-producer, played four weeks to capacity Eisenhower Theater audiences before moving to Broadway where it received seven Tony Awards, including "Best Musical," and the New York Drama Critics' Circle Award, "Best Musical, 1976-77."

DANCE

The 1967–1977 dance series brought to the Opera House thirteen weeks of dance by three of the world's most acclaimed companies: The New York City Ballet; the Stuttgart Ballet; and the Center's official company, the American Ballet Theatre. Audience attendance for the season's 104 performances exceeded 216,000, an average of 94 percent capacity.

Included in the New York City Ballet's nineteen-work repertory were Washington premieres of George Balanchine's *Union Jack* and Jerome Robbins' *The Cage* and *Other Dances*. Among the Stuttgart productions were American premieres of *The Sleeping Beauty*, William Forsythe's *Daphne*, and Kenneth MacMillan's *Requiem*.

Highlighting the dance year was the American Ballet Theatre world premiere of Mikhail Baryshnikov's staging of *The Nutcracker*, with Baryshnikov in the role of Nutcracker/Prince and Marianna Tcherkassky as Clara.

The Stuttgart Ballet was presented at the Center and in New York; Philadelphia; Homedale, New Jersey; and Chicago as the pilot project of a new partnership agreement between the Center and the Metropolitan Opera. Under the agreement, the Center and the Metropolitan will jointly manage American engagements of major foreign companies. During 1978, the partnership will present the Ballet Nacional de Cuba with Alicia Alonso, director and prima ballerina, and the London Festival Ballet with Rudolph Nureyev.

Under the sponsorship of the Washington Performing Arts Society, the Martha Graham Dance Company made its first Opera House appearance during 1976-1977, and the Alvin Ailey City

Center Dance Theatre returned for its sixth Center engagement. The Performing Arts Society also presented an eight-performance international folk-dance series in the Concert Hall.

MUSIC

The September 1976 engagements of La Scala and the Paris Opera (detailed in *Smithsonian Year, 1976*) continued the Center's commitment to presenting the finest opera companies from around the world.

During 1977, the Center presented 63 performances of 9 operas, and audience attendance totaled nearly 100,000. In May, the New York City Opera brought to Washington productions of *Carmen*, *Turandot*, *Die Fledermaus*, *La Traviata*, *Mefistofele*, *The Pirates of Penzance*, and a gala *Il Barbiere di Siviglia*, conducted by Sarah Caldwell, with Beverly Sills as Rosina.

Two Houston Grand opera productions, Carlisle Floyd's *Of Mice and Men* and George Gershwin's *Porgy and Bess*, played the Opera House for six weeks during June and July. *Porgy and Bess* was coproduced by the Houston Grand Opera and Sherwin M. Goldman.

The Center's fifth music festival devoted specifically to the works of an individual composer saluted the genius of George Frideric Handel. The Festival, directed by Stephen Simon and jointly sponsored by the Center and the Friends of Handel, Inc., featured the oratorios, *Saul* and *Solomon*, and a concert staging of the opera, *Rinaldo*.

During September, the Center presented the first section of a Brahms-Beethoven Cycle, with the Cleveland Orchestra and soloists Isaac Stern, Misha Dichter, Rudolf Firkusny, Janos Starker, and Daniel Majeske performing the complete Brahms symphonies, piano concerti, and other works over a seven-day period. The Cycle included a performance of *Ein Deutsches Requiem*, with Fay Robinson, Thomas Stewart, and the Choral Arts Society of Washington. The Concertgebouw of Amsterdam will perform the Beethoven Cycle during May 1978.

Each year, a number of performances are presented in the Concert Hall and Opera House by the Center's affiliate organizations. During 1976-1977, the Washington Opera, under the artistic direc-

tion of George London, produced Verdi's *Attila*, Puccini's *Madama Butterfly*, and Massenet's *Werther*. The Paul Hill Chorale, the Oratorio Society, and the Choral Arts Society of Washington presented twelve choral concerts. The Washington Performing Arts Society brought to the Concert Hall twenty-three major orchestras and thirty recital artists.

The resident National Symphony Orchestra performed 119 concerts before a total audience of nearly 265,000. Antal Dorati, who had served as Music Director since 1971, left the orchestra at the close of the 1976-1977 season to become Director of the Detroit Symphony. Mstislav Rostropovich was named to succeed to the position, beginning in 1977-1978.

FILM

The AFI Theater has presented more than 2,400 different motion pictures to an audience of nearly 500,000 since its opening in April 1973. Operated by the American Film Institute, which maintains its national headquarters within the building, the theater's programs have ranged from silent films to avant-garde American and foreign productions. Showings regularly include rare archival works—many saved from destruction by the AFI's preservation program—and film classics seldom available for general distribution.

Among the 1976-1977 film series were a tribute to RKO Radio Pictures, retrospective salutes to Katherine Hepburn, Buster Keaton, Bette Davis, and Fred Astaire, "Love Stories: A Hundred Movie Romances," "The Lubitsch Touch," and classic and contemporary films of Sweden, Finland, India, and the Soviet Union.

In November 1977, the Film Institute will celebrate its tenth anniversary with a major film festival that will utilize virtually all of the Center's projection capability. More than 160 different films and tapes are scheduled to be shown in the AFI Theater and Screening Room and the Eisenhower Theater over a twelve-day period. Participating guests will include Gene Kelly, Elizabeth Taylor, Irene Dunne, Michael Cacoyannis, and Bernardo Bertolucci. The anniversary celebration will conclude on November 17 with an Opera House Gala saluting America's most memorable films. The evening's program will be taped for nationwide television broadcast on November 21.

Educational and Public Service Programming

In response to its congressional mandate and in keeping with the concept of a *living* memorial, the Kennedy Center has undertaken extensive educational and public service programming. During fiscal year 1977, an estimated 414,000 people, nearly 9 percent of all those who visited the Center, attended 595 free events, including special performances, symposia, lectures, and exhibitions, of which 491 were presented by the Center itself and 104 by constituent organizations and other public service groups. In addition, this year the Center developed major programs to further extend its outreach and to foster new talent, new works, and new audiences throughout the country.

SPECIALLY PRICED TICKETS

Since its opening in 1971, the Center has maintained a Specially Priced Ticket Program, through which 15 percent of tickets for regular Center performances are made available at half-price to students, the handicapped, senior citizens, low-income groups, and military personnel in grades E-1 through E-4. The Program is designed to make the Center's performances accessible to everyone, regardless of economic circumstances. Attendant costs, in terms of reduced revenue potential and administrative overhead, are borne by the Center itself without public subsidy.

In fiscal year 1977, 114,847 tickets for Center-produced or Center-presented attractions were sold at half-price through the Program. The Center also requires that independent producers participate in the Program by making a percentage of their tickets available for half-price sale. During the year, combined half-price ticket sales for the Center's own attractions and those of independent producers totaled 137,927 representing a total price reduction of \$760,142.

ALLIANCE FOR ARTS EDUCATION

The Alliance for Arts Education (AAE) is a joint project of the Kennedy Center and the United States Office of Education committed to making the arts a basic part of the educational experience of every child. Operating at both the state and national level, the AAE seeks to identify and support exemplary arts-education programs

and to promote greater cooperation between arts organizations and educational institutions by serving as a public forum and a channel of information. As one part of its national commitment, the AAE recognizes and supports the work of its member organization, the National Committee, Arts for the Handicapped, an affiliate of the Kennedy Center.

Within the Center, the AAE produces children's programming designed to serve as a practicable model for other arts institutions. During 1976-1977, the Center offered, for the first time, a continuing series of children's programs scheduled throughout the school year. The twenty-seven week series featured 117 free performances of music, theater, dance, poetry, and puppetry by performing groups from around the country and attracted more than 36,000 young people.

The series culminated in the Center's first National Children's Festival, a week-long "Imagination Celebration," with 29 free performances attended by 18,000 children, parents, and teachers. Commissioned for the Festival were three new theater works for children: *Light Sings*, a multi-media production devised by Patricia Birch and Doris Chase, in cooperation with Will Holt and Gary William Friedman; *Jim Thorpe, All American*, by Saul Levitt and Harrison Ficher; and *Sir Gawain and the Green Knight*, written by Dennis Scott and performed by the Little Theatre of the Deaf.

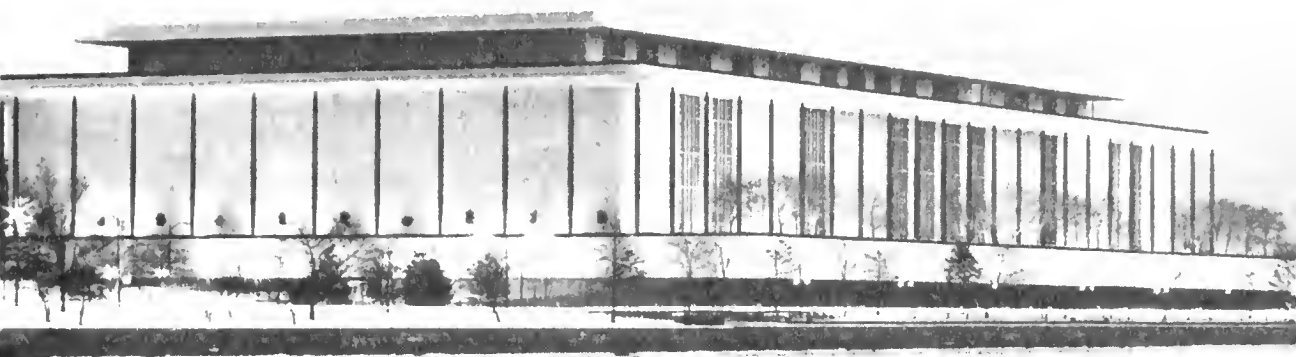
AMERICAN COLLEGE THEATRE FESTIVAL

The American College Theatre Festival, presented annually by the Kennedy Center and the Alliance for Arts Education, recognizes America's 2,300 college and university theaters and the more than 150,000 students enrolled in formal theater classes. Each year, more than 10,000 productions are staged on college and university campuses, and the Festival seeks to honor the best efforts, strengthen the rest, and encourage all students to take an active role in their theaters as writers, designers, performers, directors, and audiences.

During 1976-1977, 400 schools participated in 13 regional festivals, from which 8 productions were selected for presentation in noncompetitive showcase at the Center in April: *Historias Para ser Contadas*, Texas A&I University; *Meg*, Cornell University; *Lear*, University of Alabama; *Hay Fever*, Webster College; *Upstream Toward Lethe*, University of California, Los Angeles; *Who's Happy*



Mikhail Baryshnikov in the world premiere of his production of *The Nutcracker*, December 1976. Facing page, upper: Winter twilight view of the John F. Kennedy Center for the Performing Arts. (Photo by Richard Braaten) Lower: El Ballet Folklórico de Turismo from the Dominican Republic performing in the Grand Foyer during the 1977 Spring Festival. (Photo by Richard Braaten)



Now?, Midwestern State University; *Waiting for Godot*, Virginia Polytechnic Institute and State University; and *Round Trip Ticket*, Mankato State University.

The Festival program also included a series of awards for individual excellence in performing and playwriting. In its ninth year, the Festival was sponsored by the American Oil Company and produced by the American Theatre Association.

FRIENDS OF THE KENNEDY CENTER

In 1966, the Center's Board of Trustees established as its official auxiliary the Friends of the Kennedy Center, and for eleven years, the Friends have provided invaluable assistance to a wide range of Center projects and program activities.

Through the Friends, the Center currently presents free weekly symposia focusing on all areas of the performing arts and drawing upon the expertise of such visiting artists as Marcel Marceau, Mary Martin, Isaac Stern, and Marcia Haydée. The Friends also help to present an ongoing program of free organ demonstrations that explain the workings of the Concert Hall's Filene Memorial Organ and feature recitals by Washington-area organists.

Within the Friends membership, which now numbers nearly 8,000, are 275 active volunteers whose combined contribution to the Center totaled more than 63,000 hours during fiscal year 1977. The Volunteer Office, which functions as an information and assistance center for visitors and performance-goers, is staffed 365 days a year from 9:00 A.M. until 9:00 P.M. Each day, more than 1,000 visitors participate in tours conducted by volunteer guides, and for the benefit of foreign visitors, volunteers have prepared tour scripts in Spanish, German, Dutch, French, Italian, Hebrew, and Japanese.

The Friends also aid in the administration of the Specially Priced Ticket Program, manage souvenir sales, help to coordinate special arrangements for the handicapped, and assist the Center's mail-order department.

Proceeds from Friends' memberships and the sale of souvenirs help to underwrite the Center's educational and public-service programming. The Friends have recently embarked upon a national membership drive designed to generate new funds for expanded educational activities over the next several years.

The Friends work closely with the National Park Service, which is responsible for maintaining the Center as a presidential memorial, and from October 1, 1976, through September 30, 1977, the Friends and Park Service personnel offered information, assistance, and hospitality to nearly 4.8 million visitors.

Activities of the Friends are guided by Mrs. Polk Guest, who has served as chairman continuously since 1968.

BLACK COMMISSION

As a national institution, the Kennedy Center is dedicated to involving all segments of society in its programming activities. To assess and increase its effectiveness with respect to the black community and, in so doing, to develop methods potentially beneficial to other minority groups, the Center has established the National Commission to Expand the Scope and Constituency of Black Participation at the John F. Kennedy Center for the Performing Arts.

The Commission, composed of performers and national leaders in the arts, education, and business, began in March to forge program recommendations to increase black awareness, interest, and involvement in the Center and the performing arts, locally and across the nation.

Participating as Commission members are: Kathryn Bloom, Director, Arts and Education Program, JDR III Fund; Shirley Trusty Corey, Supervisor, Office of Cultural Resources, New Orleans Public Schools; Matiwilda Dobbs, opera singer, Professor of Voice, University of Georgia; Katherine Dunham, dancer, composer, actress, Director, Performing Arts Training Center, Southern Illinois University; John M. Ehle, novelist; Roberta Flack, singer; James O. Gibson, Public Policy Analyst, Potomac Institute; Jesse Hill, President, Atlanta Life Insurance Company; Marvin Holloway, Institute for Policy Studies, Washington, D.C.; Thomas Hoving, Director, Metropolitan Museum of Art; Quincy Jones, arranger, composer; Jack Morrison, Executive Director, American Theatre Association; Budd Schulberg, author, screenwriter; Elie Siegmeister, composer; Ellen Stewart, Executive Director, La Mama Experimental Theatre Company, New York; Billy Taylor, jazz pianist; Nancy Wilson, singer. Dr. Archie L. Buffkins, Assistant Dean of Graduate Studies, University of Maryland, serves as President of the Commission.

MUSICAL THEATRE LABORATORY

The American musical theater is suffering the effects of spiraling production costs, and, as a result, fewer and fewer musicals are mounted each year. In an effort to reverse the trend and to ensure the survival of this country's most unique contribution to the performing arts, the Kennedy Center joined with the Stuart Ostrow Foundation this year to create within the Center the Musical Theatre Laboratory.

The Laboratory, which occupies a 10,000-square-foot area of the Roof Terrace level, is designed to enable authors, composers, lyricists, choreographers, directors, and actors to develop new musicals, without the commercial pressures of full-scale productions, through a *work-in-progress* process. By reducing to a minimum such production elements as sets and costumes, full time and attention is focused on the works themselves.

The Laboratory's first season included four new musicals: *Hot Grog*, by Jim Wann and Bland Simpson; *Neverland*, by Jim Steinman; *Amerika*, by Yoram Porat and Shlomo Gronich, from the novel by Franz Kafka; and *Up from Paradise*, by Arthur Miller and Stanley Silverman.

Basic to the development process is the opportunity to perform each work before public audiences. The Laboratory seats 100, and all performances are free.

MUSIC AWARDS

As a part of its commitment to the encouragement of American performers and composers, the Center has participated in the establishment of two new award programs.

The John F. Kennedy Center–Rockefeller Foundation International Competitions for Excellence in the Performance of American Music are intended to call attention to skilled performers of recital music written by American composers since 1900. Pianists will be eligible to participate in the 1978 competition, and, in subsequent years, instrumentalists and singers will compete on an alternating basis. It is hoped that the program will stimulate greater interest in the large body of American recital music. The Competitions will be made possible by a grant from the Rockefeller Foundation.

The Kennedy Center Friedheim Awards will annually recognize

outstanding American achievement in the composition of orchestral and chamber music. Entries will be judged by a panel of music critics, and the works of the five finalists will be performed each year at the Center. The award program is named in honor of the late pianist, Arthur Friedheim, and is sponsored by a grant from the Eric Friedheim Foundation.

BICENTENNIAL PROGRAMMING

The Bicentennial Parade of American Music, sponsored by the National Music Council and funded by a grant from EXXON, concluded on December 31, 1976, with a concert tribute to John Philip Sousa. The Parade program, which was administered by the National Federation of Music Clubs, brought to the Center more than 6,000 performers in a year-long series of free State Day concerts celebrating music written by composers from each of the fifty states and the District of Columbia.

The Center's Bicentennial Exhibition, *America on Stage: 200 Years of Performing Arts*, continued through January 23, 1977. Sponsored by IBM Corporation, *America on Stage* occupied nearly 20,000 square feet of the Roof Terrace and traced the history of the American performing-arts experience from the colonial period to the present. Attendance at the twelve-month long, admission-free exhibition totaled more than 800,000.

SEASONAL FESTIVALS

The Center's 1976 Holiday Festival featured 25 free performances, including Foyer "Rug Concerts," daily puppet shows, and the annual "Messiah Sing-Along." The Festival also brought to the Concert Hall six performances of the Emmett Kelly Circus and a New Year's Eve "Night in Old Vienna," available to the public at a modest admission charge.

The Spring Festival, sponsored for the third year by McDonald's Corporation, saluted the music of the Western Hemisphere with thirty-five performances by artists from nine Latin American countries, the United States, and Canada. The Festival, presented in association with the Organization of American States, opened with a concert by the Curtis Institute Orchestra dedicated to the memory of Pablo Casals and concluded six days later with a day-long band and folk-dance concert in the Grand Foyer.

Building Repairs

On June 8, 1977, Congress authorized an appropriation of \$4.7 million to the National Park Service for repair, renovation, and reconstruction necessitated by serious water leaks from the Center's terraces, East Plaza Drive, kitchen, and roof. During fiscal year 1977, roof repairs were undertaken and completed, and remaining repairs are scheduled over a period of eighteen to twenty-four months.

Studio Theater/Recital Hall— Performing Arts Library Complex

The Center's Studio Theater/Recital Hall, left unfinished during original construction for lack of funds, is scheduled to be completed during 1978 as the result of a three-million-dollar Bicentennial gift to the United States from Japan. The 500-seat facility, designed by Philip Johnson, will be located on the Roof Terrace level and used for drama, chamber music, poetry readings, films, lectures, children's programming, and experimental works.

A performing-arts library is scheduled to be constructed in the North Gallery, adjacent to the new theater. The library, created under the joint sponsorship of the Center and the Library of Congress, will function as a research facility for Center performers and artistic staff and the general public. A core of reference materials will be supplemented by a computer link to the vast resources of the Library of Congress. The facility will also house the Center's archives and periodic performing-arts exhibitions.

National Gifts

A Kennedy Center African Room has been created on the Box Tier of the Opera House through the generosity of African nations which have contributed more than \$80,000 for its construction and decoration.

Developed by Kenneth B. Walker and Frank Sanchis, the African Room features slanted, textured walls decorated with African textiles and handicrafts. President Carter and United Nations Ambassador Andrew Young participated in dedication ceremonies on April 24, 1977.

During 1976-1977, the Center also received individual gifts from the following countries: Bulgaria—sculpture, *Maritsa River*, by Professor V. Minekov; Luxembourg—sculpture, *Ascension* by Lucien Wercollier; Malaysia—shadow-puppets from the Ramayana epics.

Funding

The Kennedy Center receives no federal funding for its performing-arts programming and administrative expenses. In addition, its educational and public service programs are carried out largely without public subsidy. The single exception is an annual congressional appropriation to the Department of Health, Education and Welfare for the Alliance for Arts Education, a joint project of the Center and the United States Office of Education. While AAE funds partially subsidize children's programming and the American College Theatre Festival, they are supplemented substantially by funds raised by the Center from private sources.

During this fiscal year, the Center's operating budget exceeded \$16 million, and, in meeting its budget obligations, the Center was almost entirely dependent upon revenue from theater operations, concession income, and private contributions.

The Center reimburses the National Park Service a pro-rata share of annual maintenance costs on the basis of a formula devised by independent accountants for the House Public Works Committee. Reimbursement payments totaled \$563,325 for fiscal year 1977.

Lacking an endowment fund, the Center must look each year to the national community for the financial support necessary to carry out its programming activities. Since the Center opened in 1971, individuals, foundations, and corporations have contributed a total of more than \$8.6 million.

In recognition of the Center's national significance and to stimulate needed funding continuity, a number of America's business leaders this year formed the Corporate Fund for the Performing Arts and projected an annual goal of \$1 million from the business community for Center programming.

Participation in the Corporate Fund is open to any business enterprise which makes an annual contribution of \$5,000 or more to the Center. Four classes of participation have been established: Corporate Leadership Circle—\$50,000 or more; Corporate Patron—\$25,000 or more; Corporate Sponsor—\$10,000 or more; Corporate Donor—\$5,000 or more.

During fiscal year 1977, contributions were received from the following:

Corporate Leadership Circle

AT&T, Atlantic Richfield Company, EXXON Corporation, IBM, Mobil Oil Corporation, Prudential Insurance Company of America.

Corporate Patrons

CBS, Inc., Canteen Corporation, E. I. DuPont de Nemours, General Electric Company, General Motors Corporation, Reynolds Industries, Inc., United States Steel Corporation, and Xerox Corporation.

Corporate Sponsors

Amerada Hess, Anheuser-Busch, Chrysler Corporation, Coca Cola Company, Ford Motor Company, Gulf Oil Company, Hoffman-LaRoche, Inc., MCA, Inc., Merck & Company, Metropolitan Life Insurance, Philip Morris, Reynolds Metals Company, Rockwell International, Sears Roebuck & Company, Shell Oil Company, Texaco, Inc., and United Technologies Corporation.

Corporate Donors

Allbritton Foundation, Allied Chemical Foundation, American Can Company, American Security Bank, Arthur Anderson & Company, Ashland Oil Company, C&P Telephone Company, Celanese Corporation, Dresser Industries, Federated Department Stores, Fruehauf Corporation, Getty Oil, Haskins & Sells, International Paper Company, Johnson & Higgins, S. C. Johnson and Company, Kellogg's, Kerr-McGee, LTV Corporation, Martin Marietta Corporation, National Geographic Society, Neiman Marcus, PEPCO, Inc., Perpetual Federal Savings & Loan Association, Phelps-Dodge Corporation, Price, Waterhouse & Company, Riggs National Bank, Sun Company, Inc., Textron, Union Carbide Company, Washington Post Company.

Board of Trustees

Although organizationally a bureau of the Smithsonian Institution, the Kennedy Center is administered separately by a forty-five-member Board of Trustees composed of thirty members appointed by the President of the United States to ten-year overlapping terms and fifteen members ex-officio from pertinent government agencies, the Senate, and the House of Representatives.

Members of the Kennedy Center Board of Trustees are as follows:

Roger L. Stevens, *Chairman*
Mrs. Howard H. Baker, Jr.
Daniel J. Boorstin
Ernest Boyer
J. Carter Brown
Joseph A. Califano, Jr.
Robert S. Carter
Mrs. Edward Finch Cox
Mrs. J. Clifford Folger
Abe Fortas
Peter H. B. Frelinghuysen
J. William Fulbright
Leonard H. Goldenson
R. Philip Hanes, Jr.
Orval Hansen
Mrs. Rebekah Harkness
Mrs. Paul H. Hatch
William K. Hitchcock
Mrs. Bob Hope
Frank Ikard
Edward M. Kennedy
Thomas H. Kuchel
Melvin R. Laird

Mrs. Michael J. Mansfield
Mrs. J. Willard Marriott
Robert I. Millonzi
Ronald H. Nessen
Charles H. Percy
Mrs. Donna Stone Pesch
Albert H. Quie
S. Dillon Ripley II
Teno Roncalio
Mrs. Jouett Shouse
Mrs. Jean Kennedy Smith
John G. Spatuzza
Henry Strong
William H. Thomas
Frank Thompson, Jr.
Benjamin A. Trustman
Jack J. Valenti
Walter E. Washington
Lew R. Wasserman
William J. Whalen
Harrison A. Williams, Jr.
Mrs. Jack Wrather
Mrs. George A. Garrett,
Honorary Trustee



An appreciative audience reading their new RIF books,
proving once again that Reading Is FUNDamental.

READING IS FUNDAMENTAL, INC.

IN A PERIOD WHICH HAS SEEN the trial and failure of countless prescriptions for literacy, Reading Is Fundamental, Inc., (RIF) has passed all tests since 1966, emerging as a recognized and much honored leader in the campaign to give each American child the right to read. RIF was organized in the Washington, D.C., public schools by Mrs. Robert McNamara and took up residence in the Smithsonian Institution in 1968. There are now over 700 reading motivation programs, operating in 48 states, in communities both large and small, each introducing children to the joy of selecting and keeping their own books. Using fiscal 1976 funds, RIF expects to distribute about 9 million inexpensive paperback books to approximately 1.8 million children—a long way indeed from the days when a single pilot program served District of Columbia school children.

RIF recognizes that effective teaching is indispensable, but it also recognizes one thing more: without the will to read, even the most imaginative teaching cannot coax a child into literacy. RIF aims to develop the desire to read by circling exciting reading activities around book distributions, occasions when children freely choose paperback books and keep them for their own.

The success of Reading Is Fundamental's method has been widely acclaimed. In September 1976, RIF distinguished itself by winning a contract with the United States Office of Education Right to Read Program, assuming the responsibility to administer the Federal Inexpensive Book Distribution Program. This contract marks a milestone in RIF's history. Local reading motivation programs which formerly depended on local funds may now apply to RIF for federal funds to match each locally raised dollar one for one. The combined attraction of federal funds and RIF's reputation has sparked an im-

pressive response. In the first year of its operation, thousands of inquiries about the Inexpensive Book Distribution Program have been received by RIF. The national office reviewed over 800 proposals to establish reading motivation programs and approved nearly 650.

Leaders in business, education, and government have joined private citizens in supporting RIF. Secretary of Health, Education and Welfare Joseph A. Califano, Jr., has endorsed RIF's efforts. For the second consecutive year, Reading Is Fundamental has won the United States Office of Education Literacy Day Award. United States Commissioner of Education Ernest L. Boyer has written, "I endorse wholeheartedly the remarkable private volunteer effort that Reading Is Fundamental has become. . . . I commend it to educators everywhere for their cooperation and support."

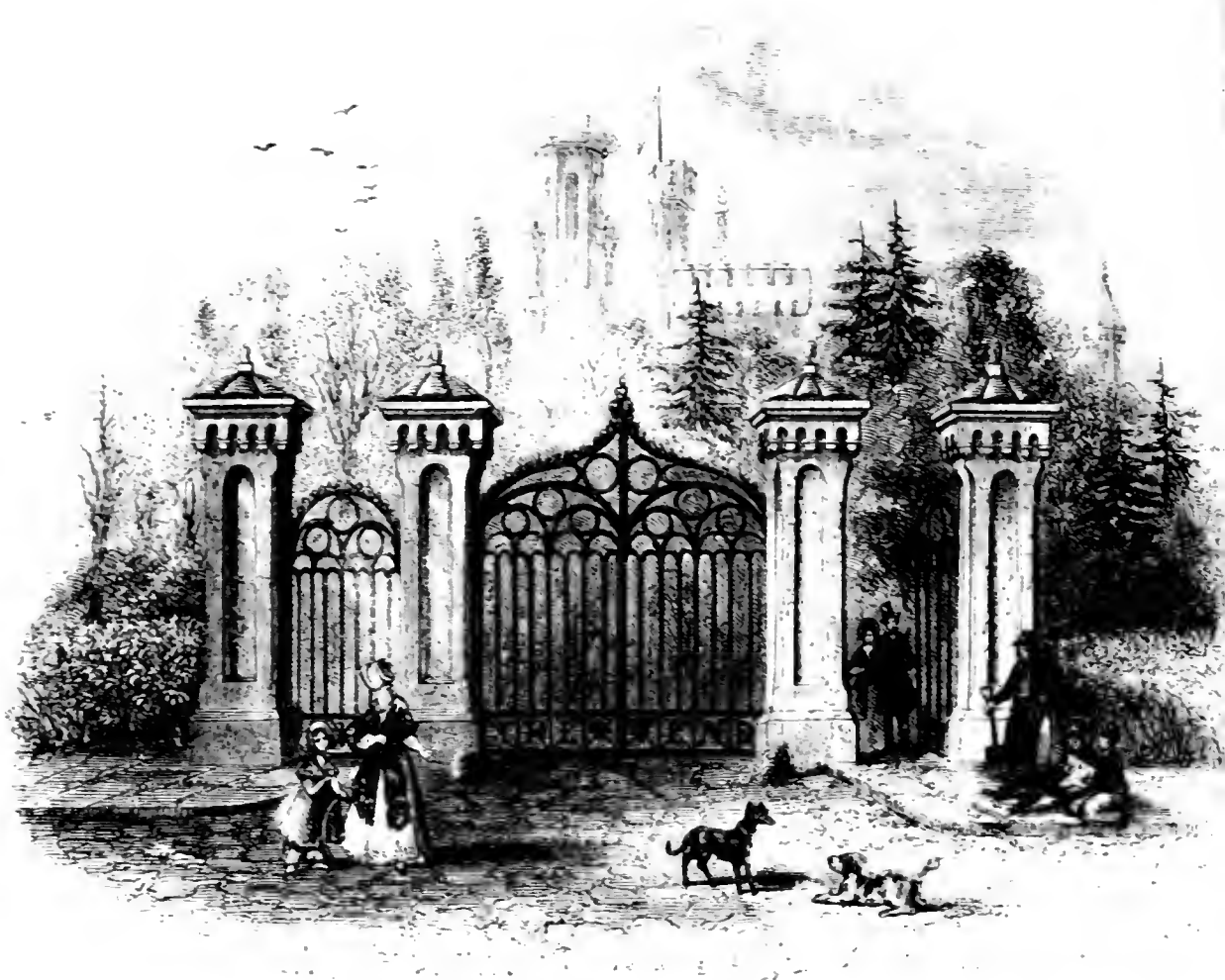
Other organizations have cooperated in the RIF effort. The Association of Library Services for Children of the American Library Association (formerly the Children's Services Division) publicly endorsed RIF, urging local libraries to establish reading motivation programs in their communities. The Boys Clubs of America have similarly endorsed the program. RIF has worked with dozens of other organizations, including the General Federation of Women's Clubs, the International Reading Association, the Educational Paperback Association, the National School Volunteer Program, the National Association of Elementary School Principals, the Chief State School Officers, and the National Urban League.

The children's publishing community has also supported Reading Is Fundamental. Nearly 150 publishers and distributors—major houses and small presses and distributors—have qualified to supply books to the Inexpensive Book Distribution Program. The industry's trade magazine, *Publishers Weekly*, has willingly publicized the new federal program, as have such magazines as the *School Library Journal*. And RIF enjoys the friendly cooperation of the Association of American Publishers and prominent figures in the children's book world.

In addition to organizing a network of programs, Reading Is Fundamental has researched the theory and practice of reading motivation and forged the results into tools for volunteers. With a grant from the W.K. Kellogg Foundation, RIF produced a series of tapes and a manual to guide intensive volunteer training sessions.

RIF created the film *Read, Read, Read* to dramatize the RIF concept, as well as a training manual and periodic bulletins to refine volunteer skills. Through its ability to translate research into tools, RIF has made a major contribution to the education and recruitment of America's volunteer movement.

RIF's volunteers are the brightest token of its success. In 1976, alone, over 25,000 people were actively engaged in RIF programs. For those who rely, as RIF does, on the common sense and dedication of private citizens, the support of these volunteers is the clearest, most telling evidence of the program's practical ability to convince children of all backgrounds, from every region of the country, that reading is a joy worth pursuing.



Southern Gateway, Smithsonian Institution.

James Renwick, Jr., who designed the original Smithsonian Building, also designed this gateway that was to open into a garden on the south side of the building. Last year the garden became a reality. This charming print is from *Hints on Public Architecture* by Robert Dale Owen, 1849.

SMITHSONIAN SCIENCE
INFORMATION EXCHANGE, INC.

THE RANGE OF ACTIVITIES and programs of the Smithsonian Science Information Exchange, Inc., developed in a significant way this year in the following three major areas.

First, the scientifically related subject indexing which has been developed and applied to projects by the scientific staff, predominantly for the purposes of retrieving projects from the data base, has been utilized in a new way which should have far-reaching implications for those who require a better basis for monitoring and evaluating program progress in scientific research, both within and outside the federal structure.

Second, the Exchange has continued to expand the availability and usefulness of the basic source document of the Exchange, the Notice of Research Project (NRP), by its increased interactions with government agencies and individual users.

A third significant feature of this year's activities included a special project to solicit and organize for publication a directory of worldwide ongoing research information systems in cooperation with UNESCO, UNISIST and with the support of the National Science Foundation. This project represents the Exchange's continuing role in the area of international activities directed toward improving the development and exchange of ongoing research information.

The first area of development in the new application of scientific subject indexing applied to project abstracts in support of program planning and evaluation efforts depends on a statistical analysis of the index points applied to a group of projects defined by subject or administrative limits. The unique hierarchial structure of the indexing and the consistency of its application allow a meaningful statistical analysis of the total set of index points on any defined

groups of projects, which provides a basis for expert panels to more reliably identify the components of scientific activity contributing to a program or research objective. Analyzed on a year-to-year basis, or across program components, this approach will provide an improved method to identify areas of over- or under-emphasis which will allow research programs to be better balanced and indicate areas where additional support may be needed to ensure a high probability of success for completion or breakthrough in major scientific or technological endeavor. Further testing of this analytical approach will be made in the coming year.

The Exchange has continued a number of programs which have evolved in several ways to meet user needs. A major program, the Current Cancer Research Project Analysis Center (CCRESPAC), has continued in its third year. In addition to providing retrospective searches of the data base on highly specialized topics of cancer research, the Exchange has also provided searches which help three CIDAC Centers of the National Cancer Institute's (NCI) International Cancer Research Data Bank (ICRDB) Program to define the scope of certain areas of cancer research and identify the recipients of research grants in these areas in order to locate articles in the published literature on cancer.

During the year the Exchange completed the preparation for publication of sixty Special Listings of Current Research Topics in selected areas of cancer research. These publications included all ongoing research registered with the Exchange and were distributed by the National Cancer Institute worldwide to principal research investigators whose work was included in the Exchange's data base.

The year also saw the further development of the CANCERPROJ on-line file through CANCERLINE, sponsored by NCI through the National Library of Medicine. This computerized file has approximately 17,000 current research projects, 3,000 of which are from sources other than the United States.

This year also marked the second full year on the preparation and publication of the *Directory of Toxicology Research in Progress*. In an effort to make the publication of these directories more useful to those concerned with scientific research in toxicology, a new format for the directory was evolved for the new year including publication on a monthly rather than quarterly basis.

The Exchange continued to prepare and provide information for

publications of ongoing research in aerospace research, dental research, and international energy research.

The Exchange has seen a dramatic increase in the use of its data base which has now been available for on-line use for the past two years. Use in the current year was almost double that of the previous year. The data base will be available in the fall of 1977 through another commercial system thus allowing users a choice of on-line systems.

Significant improvements were made in the data-processing area during the year to add additional information to be included in the research projects which will increase the usefulness of the Exchange's data base and provide greater flexibility to the Exchange in responding to user needs. A recent study of a sampling of the Exchange's users carried out by the Denver Research Institute for the SSIE has provided new insight into users' needs and the way in which on-going research information is used. This information is expected to play a significant role in the development of new output products and services developed in the coming year.



David and Saul with the Head of Goliath, by Giovanni Benedetto Castiglione, new addition to the print collection of the National Gallery of Art made possible by the Andrew W. Mellon Purchase Fund.

NATIONAL GALLERY OF ART

J. CARTER BROWN, DIRECTOR

THE NATIONAL GALLERY OF ART, although formally established as a bureau of the Smithsonian Institution, is an autonomous and separately administered organization. It is governed by its own Board of Trustees, the statutory members of which are the Chief Justice of the United States, Chairman; the Secretary of State; the Secretary of the Treasury; and the Secretary of the Smithsonian Institution, all *ex officio*; and five general trustees. Paul Mellon continued in 1977 as president of the Gallery and John Hay Whitney as vice president. The other general trustees continuing to serve were Carlisle H. Humelsine, Dr. Franklin D. Murphy, and John R. Stevenson.

During the year, the Gallery counted 3,083,920 visitors. Attendance at the exhibition "The Treasures of Tutankhamun" during its seventeen-week run was 835,924.

A number of important works of art were acquired. Notable paintings donated were Gauguin's *The Invocation*, a Rothko, and a seminal work by Andrew Wyeth entitled *Snow Flurries*. An early still life, *Flowers in an Urn*, by Jan van Huysum was purchased.

Of the twenty-one works of sculpture added to the collection during the year, twenty postdate the year 1900, dramatically enhancing the Gallery's twentieth-century sculpture holdings. Included among them are six Giacomettis and a Henry Moore.

Acquisitions of works of graphic art included nineteen drawings, among them several important drawings illustrating the early development of Dutch landscape, and a Longhi portrait. Significant additions to the print collection were *The Letter "Y,"* by Master ES; an enormous woodcut, *Fall of the Giants*, by Coriolano; and

a monotype by Castiglione, *David and Saul with the Head of Goliath*. Castiglione invented the process of monotype and was the only important old master to practice it.

Ten exhibitions were offered by the Gallery during the year. Overshadowing the others was the "Treasures of Tutankhamun" displaying fifty-five of the most precious and artistic objects found in the boy-king's tomb. This exhibition, arranged by a high-level agreement between the Arab Republic of Egypt and the United States, had its inaugural run at the Gallery and will have been displayed in six other American museums by 1979. Another notable though briefer exhibition was that of Nō Robes and Masks used during the three centuries of Shogunate rule in Japan. It marked the first time this collection, owned by the Tokugawa family, had been seen in the United States. Other exhibitions included "Morris Louis: Major Themes and Variations" and six exhibitions devoted to graphics from Titian and sixteenth-century Venice to twentieth-century France.

The Gallery made loans to forty-three exhibitions at fifty-six institutions including fifteen abroad. Among the objects lent were seventy-six paintings, three sculptures, and fifty-three graphics.

The Department of Extension Programs, relocated in new quarters in the connecting link, completed a program of refurbishing, revising, and repackaging all existing programs some of which were originally prepared more than twenty years earlier. Four new programs consisting of color slides, audio cassettes and printed text were issued, and six new films on major artists. A new completely revised illustrated catalogue vividly presents the range and diversity of the free-loan materials available. Total bookings were 29,984, witnessed by an aggregate estimated audience of 2,370,000.

Total attendance at talks given by the Gallery's Education Department and at the programs presented in the auditorium was 153,298. These included the regularly scheduled auditorium lectures and films; the Introduction to the Collection, the Tour of the Week and Painting of the Week talks; as well as special introductory presentations keyed to four of the exhibitions. There were thirty-one guest lecturers including the twenty-fifth annual Andrew W. Mellon Lecturer in the Fine Arts, André Chastel, the eminent French authority on the Italian Renaissance whose lectures analyzed the causes and events of the Sack of Rome in 1527

by the army of the Emperor Charles V and the resultant diaspora of the art and artists of that city. Other distinguished scholars who lectured included Wolfgang Lotz, Kress Professor-in-Residence; Michael Jaffe, director of the Fitzwilliam Museum in Cambridge; and David Rosand of Columbia University.

The Conservation staff, preparing to move into its new laboratory space in what was the old cafeteria, has been expanded to nine professionals compared to just three part-timers five years ago. During the year, it completed major restoration on 8 paintings and did minor work on 134 others. The paper conservator performed major treatment on 6 works of graphic art and under her supervision more than 2,000 works were mounted, framed, or given limited restoration. The new conservation scientist directed her attention primarily to investigations attending the removal of the dark varnish from Rembrandt's *The Mill* and took on the in-house portion of continuing research into artists' pigments and other materials.

The Library staff, preparing to move into larger and far more efficient space in the East Building, increased its professional staff to nineteen compared to twelve in 1972. During the year, over 6,000 items were received including several important encyclopedias to build up the reference collection. The Photographic Archives added more than 130,000 photographs, most of them purchased with funds provided by the Kress Foundation.

The sales facilities, augmented for the "Treasures of Tutankhamun" exhibition, handled 375,122 over-the-counter orders and 5,114 mail orders.

The Music Program consisted of forty Sunday evening concerts in the East Garden Court, two string recitals at exhibition openings, and, by means of a special grant from Exxon Corporation, a marathon of rotating string performances during the last eight days of the Tutankhamun exhibition for the benefit of those waiting in line.

By the end of September, the Concourse connecting the original building with the new East Building had been occupied for fifteen months and the Cafe/Bufferet eating facilities that virtually fill the public space therein served 1,127,740 patrons. The East Building has reached 96 percent completion and is scheduled for dedication and opening to the public on June 1, 1978.

TEMPORARY EXHIBITIONS AT THE GALLERY
IN FISCAL YEAR 1977

Morris Louis: Major Themes & Variations

Continued from the previous fiscal year through January 9, 1977.

Titian and the Venetian Woodcut

October 30, 1976, through January 2, 1977.

Treasures of Tutankhamun

November 17, 1976, through March 15, 1977.

Seventeenth Century Dutch Drawings from American Collections

January 28 through March 13, 1977.

The Tokugawa Collection: Nō Robes and Masks

April 10 through May 22, 1977.

Paper in Prints

May 1 through July 31, 1977.

Prints of Paris: The 1890s

May 1 through July 31, 1977.

Accessible Arts (Photo exhibit on handicapped persons and the arts)

May 20–22, 1977.

Henri Matisse Paper Cut-outs

September 10, 1977, to the end of the fiscal year.

French Prints By 20th-Century Masters

September 11, 1977, to the end of the fiscal year.

BOARD OF TRUSTEES

EX OFFICIO

The Chief Justice of the United States

Warren E. Burger, Chairman

The Secretary of State

Cyrus R. Vance

The Secretary of the Treasury

W. Michael Blumenthal

The Secretary of the Smithsonian Institution

S. Dillon Ripley

GENERAL

Carlisle H. Humelsine

Paul Mellon

Franklin D. Murphy

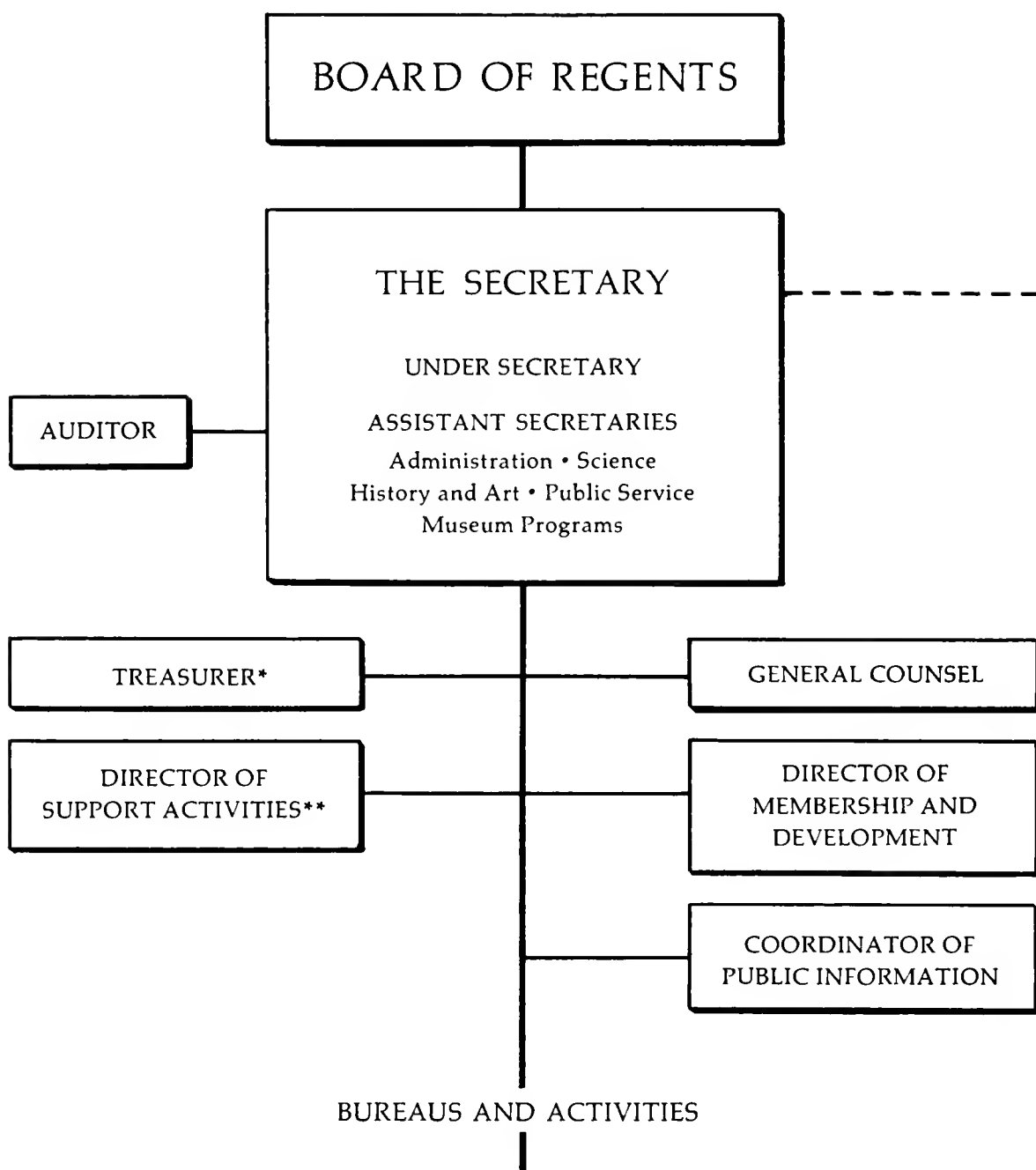
John R. Stevenson

John Hay Whitney

APPENDICES

Organization Chart	<i>page</i>	236
1. Members of the Smithsonian Council, Boards, and Commissions, September 30, 1977		238
2. Smithsonian Special Foreign Currency Program Research Supported in Fiscal Year 1977		244
3. National Museum Act Grants Awarded in Fiscal Year 1977		247
4. Progress on Building Construction, Restoration, and Renovation		251
5. Publications of the Smithsonian Institution Press in Fiscal Year 1977		252
6. Publications of the Staff of the Smithsonian Institution and Its Subsidiaries in Fiscal Year 1977		264
7. Academic Appointments in Fiscal Year 1977		330
8. Benefactors of the Smithsonian Institution in Fiscal Year 1977		343
9. List of Donors to the Smithsonian Institution in Fiscal Year 1977		367
10. Visitors to the Smithsonian Institution, October 1, 1976, through December 31, 1977		428
11. Staff of the Smithsonian Institution and Its Subsidiaries, September 30, 1977		429

SMITHSONIAN INSTITUTION



SCIENCE

Chesapeake Bay Center for Environmental Studies
 Fort Pierce Bureau
 National Air and Space Museum
 National Museum of Man
 Center for the Study of Man
 National Museum of Natural History
 Smithsonian Oceanographic Sorting Center
 National Zoological Park
 Office of International Programs
 Radiation Biology Laboratory
 Smithsonian Astrophysical Observatory
 Smithsonian Tropical Research Institute

HISTORY AND ART

Archives of American Art
 Cooper-Hewitt Museum of Design and Decorative Arts
 Freer Gallery of Art
 Hirshhorn Museum and Sculpture Garden
 Joseph Henry Papers
 National Collection of Fine Arts
 Renwick Gallery
 National Museum of History and Technology
 National Portrait Gallery
 Office of Academic Studies
 Office of American and Folklife Studies

MUSEUM PROGRAMS

Conservation Analytical Laboratory
 National Museum Act Programs
 Office of Exhibits Central
 Office of Horticulture
 Office of Museum Programs
 Office of the Registrar
 Smithsonian Archives
 Smithsonian Institution Libraries
 Smithsonian Institution
 Traveling Exhibition Service

Under Separate Boards of Trustees:

NATIONAL GALLERY OF ART

JOHN F. KENNEDY CENTER
FOR THE PERFORMING ARTS

WOODROW WILSON
INTERNATIONAL CENTER
FOR SCHOLARS

SMITHSONIAN
SCIENCE INFORMATION
EXCHANGE, INC.

BOARDS AND COMMISSIONS

Advisory Board of the
Cooper-Hewitt Museum of
Design and Decorative Arts

Advisory Council for the
National Museum Act

Archives of American Art
Board of Trustees

Freer Visiting Committee

Hirshhorn Museum and
Sculpture Garden
Board of Trustees

National Air and Space Museum
Advisory Board

National Armed Forces
Museum Advisory Board

National Board of the
Smithsonian Associates

National Collection of Fine Arts
Commission

National Portrait Gallery
Commission

Smithsonian Council

Smithsonian
Foreign Currency Program
Advisory Councils

PUBLIC SERVICE

Anacostia Neighborhood Museum
Division of Performing Arts
Office of Elementary and
Secondary Education
Office of Smithsonian Symposia
and Seminars
Office of Telecommunications
Smithsonian Resident Associates
Smithsonian Institution Press
Smithsonian Magazine
Visitors Information and
Associates Reception Center

*FINANCIAL SERVICES

Accounting
Business Management
Belmont Conference Center
Product Development Program
Smithsonian Museum Shops
Grants and Insurance
Administration
Investments Accounting
Programming and Budget

**SUPPORT ACTIVITIES

Computer Services
Contracts
Equal Opportunity
Facilities Planning
and Engineering Services
International Exchange Service
Management Analysis
Personnel Administration
Plant Services
Printing and Photographic
Services
Protection Services
Supply Services
Travel Services

APPENDIX 1. *Members of the Smithsonian Council, Boards,
and Commissions, September 30, 1977*

Smithsonian Institution Board of Regents

Warren E. Burger, *Chief Justice of the United States, Chancellor*
Walter F. Mondale, *Vice President of the United States*
Henry M. Jackson, *Member of the Senate*
Barry Goldwater, *Member of the Senate*
Claiborne Pell, *Member of the Senate*
George H. Mahon, *Member of the House of Representatives*
Elford A. Cederberg, *Member of the House of Representatives*
Corinne C. Boggs, *Member of the House of Representatives*
J. Paul Austin, *citizen of Georgia*
John Nicholas Brown, *citizen of Rhode Island*
William A. M. Burden, *citizen of New York*
Murray Gell-Mann, *citizen of California*
Caryl P. Haskins, *citizen of the District of Columbia*
A. Leon Higginbotham, Jr., *citizen of Pennsylvania*
Thomas J. Watson, Jr., *citizen of Connecticut*
James E. Webb, *citizen of the District of Columbia*

Executive Committee, Board of Regents

Warren E. Burger, *Chancellor (Board of Regents), ex officio*
William A. M. Burden
Caryl P. Haskins
James E. Webb (*Chairman*)

The Smithsonian Council

Roger D. Abrahams	Stephen Jay Gould
George A. Bartholomew	David C. Hawkins
Milton W. Brown	August Heckscher
Reid A. Bryson	Nathan Huggins
Frederick H. Burkhardt	George F. Lindsay
Archie F. Carr, Jr.	Giles W. Mead
Carl W. Condit	Ruth Patrick
Mrs. Camille W. Cook	Gordon N. Ray, (<i>Chairman</i>
Miss Anne d'Harnoncourt	<i>of the Smithsonian Council)</i>
Richard M. Dorson	Harold Rosenberg
A. Hunter Dupree	Carl E. Sagan
Fred R. Eggan	Andre Schiffrin
Murray Gell-Mann	Barbara W. Tuchman
Frank B. Golley	

HONORARY MEMBERS

H. Harvard Arnason
Muriel M. Berman
Herman R. Branson
Donald S. Farner
Anthony N. B. Garvan
Peter C. Goldmark
Philip Handler
Jan LaRue
James Liverman
Clifford L. Lord

Charles D. Michener
Peter M. Millman
Philip C. Ritterbush
George C. Seybolt
Cyril S. Smith
John D. Spikes
Stephen E. Toulmin
William von Arx
Warren H. Wagner, Jr.
Rainer Zangerl

Board of Academic Studies

Ira Rubinoff, *Chairman*
Brooke Hindle
Porter M. Kier
Abram Lerner

W. Shropshire, Jr.
Charles Blitzer, *ex officio*
David Challinor, *ex officio*

Archives of American Art Board of Trustees

Mrs. Otto L. Spaeth, *Chairman*
Irving F. Burton, *President*
Gilbert H. Kinney, *Vice President*
Mrs. Nancy B. Negley, *Vice President*
Mrs. E. Bliss Parkinson, *Vice President*
Mrs. Dana M. Raymond, *Secretary*
Henry de Forest Baldwin, *Treasurer*
Edwin A. Bergman
Mrs. John L. Bradley
Joel S. Ehrenkranz
Mrs. Walter B. Ford II
Joseph Hirshhorn
Milka Iconomoff

Howard W. Lipman
Harold O. Love
Russell Lynes
Richard Manoogian
Porter A. McCray
Abraham Melamed
Mrs. William L. Mitchell
Frederic A. Sharf
Mrs. Louise Talbot Trigg
Edward M. M. Warburg
George H. Waterman III
S. Dillon Ripley, *ex officio*
Charles Blitzer, *ex officio*

FOUNDING TRUSTEES

Lawrence A. Fleischman

Mrs. Edsel B. Ford ¹

E. P. Richardson

HONORARY TRUSTEE

Mrs. William L. Richards

*National Museum of Man, Center for the Study of Man
National Anthropological Film Center Advisory Council*

Margaret Mead
Mrs. Roma S. Crocker
William H. Crocker
Gordon D. Gibson
Edward T. Hall
Paul Hockings
Matthew Huxley

Mrs. Constantine B. Mellon
Jay W. Ruby
George D. Spindler
Mrs. Marion Stirling
Sol Tax
E. Fuller Torrey
Carroll W. Williams

¹ Deceased.

*Advisory Board of the Cooper-Hewitt Museum
of Design and Decorative Arts*

Thomas E. Murray II, *Chairman*
Albert I. Edelman, *Vice Chairman*
Mrs. Miles Pennybacker, *Secretary*
Sidney Gruson, *Treasurer*
Cass Canfield, Jr., *Member*

Mrs. Howard J. Sachs, *Member*
Robert C. Weaver, *Member*
S. Dillon Ripley, *Secretary,*
Smithsonian Institution, ex officio

HONORARY MEMBER Mrs. Margaret Carnegie Miller

Freer Visiting Committee

Mrs. Jackson Burke
Kwang-Chih Chang
Marvin Eisenberg
Mrs. Katherine Graham
Charles Greenfield

John M. Rosenfield
Hugh Scott
Laurence Sickman
John Thacher

*Hirshhorn Museum and Sculpture Garden
Board of Trustees*

Daniel P. Moynihan, *Chairman*¹
Leigh B. Block, *Vice-Chairman*
H. Harvard Arnason
Anne d'Harnoncourt
Warren E. Burger, *Chief Justice of the United States, ex officio*
S. Dillon Ripley, *Secretary, Smithsonian Institution, ex officio*

Thomas M. Evans
Sydney Lewis
Dorothy C. Miller
Jerome Greene²

Horticultural Advisory Committee

S. Dillon Ripley, *ex officio*
James R. Buckler
Robert Baker
Jimmie L. Crowe
Mrs. Belva Jensen

Carlton B. Lees
Donald Parker
Mrs. Frances Patteson-Knight
Robert Read
Russell Seibert

ORCHID SUBCOMMITTEE

James R. Buckler
Edward Ayensu
Paul Desautels

Lauranne C. Nash
Robert Read
Mrs. S. Dillon Ripley

National Air and Space Museum Advisory Board

EX OFFICIO

S. Dillon Ripley
Jefferson W. Cochran
Brigadier General James L. Collins
Lieutenant General Thomas E. Miller, Jr.

Major General William C. Morris
Herbert J. Rowe
Rear Admiral James S. Gracey
Vice Admiral Frederick C. Turner

CITIZEN MEMBERS

Mrs. O. A. Beech

Lieutenant General Elwood R. Quesada, *USAF (Ret)*

¹ Reelected at meeting of Board of Trustees, June 21, 1977.

² Elected at meeting of Board of Trustees, June 21, 1977.

National Air and Space Museum Visiting Committee

Alexander H. Flax	Lyon T. Silver
Gerard K. O'Neill	Lieutenant General James T. Stewart, <i>USAF (Ret)</i>
Russell L. Schweickart	Richard Y. Whitcomb

National Armed Forces Museum Advisory Board

John Nicholas Brown, <i>Chairman</i>	
Clifford L. Alexander, Jr., <i>Secretary of the Army</i>	
W. Graham Claytor, <i>Secretary of the Navy</i>	
John C. Stetson, <i>Secretary of the Air Force</i>	
Fred L. Dixon	Theodore Ropp
William I. Greener, Jr.	James M. Stone, Sr.
William H. Perkins, Jr.	

EX OFFICIO

Harold Brown, *Secretary of Defense*
S. Dillon Ripley, *Secretary of the Smithsonian Institution*

Advisory Council for the National Museum Act

Robert Feller	Joseph Veach Noble
Russell Fridley	Richard H. Randall
Bonnie Pitman Gelles	Mitchell Wilder
Julia Hotton	Vernal L. Yadon
Philip S. Humphrey	Paul N. Perrot, <i>Chairman</i>
Thomas W. Leavitt	

National Board of the Smithsonian Associates

William S. Anderson	Henry J. Heinz II
Harry Hood Bassett	John N. Irwin II
George C. McGhee, <i>Chairman</i>	James M. Kemper, Jr.
Robert O. Anderson	Mrs. Robert A. Magowan
Henry C. Beck, Jr.	Mrs. Robert S. McNamara
Keith S. Brown	Scott McVay
Mrs. Jackson Burke	Ruben F. Mettler
William T. Coleman, Jr.	John R. Norton III
Gaylord Donnelley	Charles M. Pigott
Thomas M. Evans	George S. Pillsbury
Charles T. Fisher III	Arthur A. Seeligson, Jr.
Mrs. David L. Guyer	Vernon Taylor, Jr.
Mrs. Karl G. Harr, Jr.	James O. Wright

HONORARY MEMBERS

Richard P. Cooley	Mrs. Lyndon B. Johnson
Joseph F. Cullman 3rd	Lewis A. Lapham
Leonard K. Firestone	Nelson A. Rockefeller
Alfred C. Glassell, Jr.	Francis C. Rooney, Jr.
William A. Hewitt	Merritt Kirk Ruddock
	Thomas J. Watson, Jr.

National Collection of Fine Arts Commission

George B. Tatum, <i>Chairman</i>	S. Dillon Ripley, <i>Secretary</i>
Otto Wittmann, <i>Vice Chairman</i>	Mrs. Elizabeth Brooke Blake

Thomas S. Buechner
Lloyd Goodrich
Walker Hancock
R. Philip Hanes, Jr.
Bartlett H. Hayes, Jr.
August Heckscher
Thomas C. Howe
Mrs. Jaquelin H. Hume

David Lloyd Kreeger
Abram Lerner
Mrs. Robert A. Magowan
Mrs. Hiram W. McKee
Harold Rosenberg
Charles H. Sawyer
Mrs. Otto L. Spaeth

HONORARY MEMBERS

Martin Friedman
Henry McIlhenny
Paul Mellon

Stow Wengenroth
Alexander Wetmore
Andrew Wyeth

National Portrait Gallery Commission

John Nicholas Brown, *Chairman*
Ralph Ellison
David E. Finley ¹
Wilmarth Sheldon Lewis ²
Robert L. McNeil, Jr.
Andrew Oliver

E. P. Richardson
Robert Hilton Smith
Katie Louchheim
Barry Bingham, Sr.
Joe L. Allbritton ³

Warren E. Burger, *Chief Justice of the United States, ex officio*
S. Dillon Ripley, *Secretary, Smithsonian Institution, ex officio*
J. Carter Brown, *Director, National Gallery of Art, ex officio*

*Office of International Programs,
Smithsonian Foreign Currency Program Advisory Councils*

ARCHEOLOGY AND RELATED DISCIPLINES ADVISORY COUNCIL

Esin Atil
Daniel G. Bates
George F. Dales
George Hughes

Daniel H. H. Ingalls
Thomas Jacobsen
John Yellen (observer)

ASTROPHYSICS AND EARTH SCIENCES ADVISORY COUNCIL

Felix Chayes
Henry Faul
George Field
Paul Hodge
William H. Klein

William Melson
Thornton Page
Victor Szebehely
Louis Walter

SYSTEMATIC AND ENVIRONMENTAL BIOLOGY ADVISORY COUNCIL

D. A. Livingstone
Robert P. McIntosh (observer)
Robert Ornduff
Norman D. Newell

Herbert H. Ross
R. Ruibal
Richard W. Thorington, Jr.

¹ Deceased February 1, 1977.

² Resigned August 25, 1976.

³ Appointed January 24, 1977.

*Woodrow Wilson International Center for Scholars
Board of Trustees*

William J. Baroody, *Chairman*
Paul W. McCracken, *Vice Chairman*
James A. Baker III, *Houston, Texas*
Daniel J. Boorstin, *Librarian of Congress*
Robert H. Bork, *New Haven, Connecticut*
Joseph A. Califano, *Secretary of Health, Education and Welfare*
Bryce N. Harlow, *Washington, D.C.*
A. James Reichley, *Yardley, Pennsylvania*
James B. Rhoads, *Archivist of the United States*
S. Dillon Ripley, *Secretary of the Smithsonian Institution*
Dean Rusk, *Athens, Georgia*
Cyrus R. Vance, *Secretary of State*
Rawleigh Warner, Jr., *New York, New York*

Kennedy Center Board of Trustees

Roger L. Stevens, *Chairman*
Mrs. Howard H. Baker, Jr.
Daniel J. Boorstin
Ernest Boyer
J. Carter Brown
Joseph A. Califano, Jr.
Robert S. Carter
Mrs. Edward Finch Cox
Mrs. J. Clifford Folger
Abe Fortas
Peter H. B. Frelinghuysen
J. William Fulbright
Leonard H. Goldenson
R. Philip Hanes, Jr.
Orval Hansen
Mrs. Rebekah Harkness
Mrs. Paul H. Hatch
William K. Hitchcock
Mrs. Bob Hope
Frank Ikard
Edward M. Kennedy
Thomas H. Kuchel
Melvin B. Laird
Mrs. Michael J. Mansfield

Mrs. J. Willard Marriott
Robert I. Millonzi
Ronald H. Nessen
Charles H. Percy
Mrs. Donna Stone Pesch
Albert H. Quie
S. Dillon Ripley II
Teno Roncalio
Mrs. Jouett Shouse
Mrs. Jean Kennedy Smith
John G. Spatuzza
Henry Strong
William H. Thomas
Frank Thompson, Jr.
Benjamin A. Trustman
Jack J. Valenti
Walter E. Washington
Lew R. Wasserman
William J. Whalen
Harrison A. Williams, Jr.
Mrs. Jack Wrather
Mrs. George A. Garrett,
Honorary Trustee

National Gallery of Art Board of Trustees

EX OFFICIO

The Chief Justice of the United States Warren E. Burger, *Chairman*
The Secretary of State Cyrus R. Vance
The Secretary of the Treasury W. Michael Blumenthal
The Secretary of the Smithsonian Institution S. Dillon Ripley

GENERAL

Carlisle H. Humelsine
Paul Mellon
Franklin D. Murphy

John R. Stevenson
John Hay Whitney

APPENDIX 2. *Smithsonian Special Foreign Currency Program*
Research Supported in Fiscal Year 1977

ARCHEOLOGY AND RELATED DISCIPLINES
(INCLUDING ANTHROPOLOGY)

American Institute of Indian Studies, Chicago, Illinois. Continued support for administration; research fellowships; Center for Art and Archeology.

American Research Center in Egypt, Princeton, New Jersey. Operation of Center in Cairo; fellowship program in the study of archeology and related disciplines in Egypt; survey of Arabic scientific manuscripts in Cairo; the Middle Commentaries on Aristotle's *Organon* by Averroes; continuation of the architectural and epigraphic survey of Egypt; excavation at the site of Mendes in the Nile delta; an archeological map of the Theban necropolis; preparation for publication of a manuscript by the late Georges Legrain on Egyptian sculpture from Karnak in the Cairo Museum; archeological research at the site of Hierakonpolis (Nekhen) in Edfu District; a historical and architectural study of the Bayt al-Razzas; electronic survey at Tell Es-Shugafiya.

American Schools of Oriental Research, Cambridge, Massachusetts. Excavation in salient areas of Punic and Roman Carthage (Tunisia).

Brown University, Providence, Rhode Island. Epigraphic recording and architectural survey of the pharaonic and prepharaonic remains at Gebel es-Silsilah (Egypt).

Dumbarton Oaks Center for Byzantine Studies, Washington, D.C. A corpus of the mosaics of Tunisia.

Freer Gallery of Art, Washington, D.C. Studies on the art of the Mamluks (Egypt).

Herbert H. Lehman College, Bronx, New York. The long-range effects of resettlement and economic expansion in an Egyptian delta village.

Indo-U.S. Subcommittee on Education and Culture, New York, New York. Indo-U.S. Fellowship Program.

National Anthropological Film Center, Washington, D.C. Pan-Pashtoon nomad studies (India).

National Museum of Natural History, Washington, D.C. A metallurgical site survey of the Western Chagai District (Pakistan).

Oriental Institute, University of Chicago, Chicago, Illinois. Excavation of the foundations of some of the monuments of Philae (Egypt).

Southern Methodist University, Dallas, Texas. Prehistory of the Western Desert, Egypt.

State University of New York, Buffalo, New York. Investigation on the Neolithic sites in southeastern Poland.

University of Louisville, Louisville, Kentucky. Exploration of an early Medieval settlement complex in the Kujawy Region in Poland.

University of Wisconsin, Madison, Wisconsin. Contemporary South Asian civilization films (India).

Washington State University, Pullman, Washington. Prehistoric studies of northern Egypt.

SYSTEMATIC AND ENVIRONMENTAL BIOLOGY (INCLUDING PALEOBIOLOGY)

Academy of Natural Sciences, Philadelphia, Pennsylvania. Distribution, larval ecology and population balance in Polish water frogs (the *Rana esculenta* complex).

California Academy of Sciences, San Francisco, California. Systematic studies on scorpion fishes (India).

Duke University, Durham, North Carolina. Anthropological and paleontological on the fossil anthropoid sites of the Egyptian oligocene.

Howard University, Washington, D.C. Fossil Cenozoic mammals of Pakistan.

National Museum of Natural History, Washington, D.C. Biological productivity in some tropical lakes of South India, biosystematic studies of the insects of Ceylon; gene pools for Indian plants of economic value; revision of Trimen's *Handbook to the Flora of Ceylon*; and, the natural history of ground beetles at a temperate forest site, Bialowieza Primeval Forest, Poland.

National Zoological Park, Washington, D.C. Cooperative zoo exchanges (India).

Texas Tech University, Lubbock, Texas. Forage potential of arid-zone halophytes (Egypt).

University of California, Berkeley, California. Stratigraphic and paleobiologic investigations of fossil anthropoid sites in Burma.

University of California, Riverside, California. Cytotaxonomy of the Yugoslavian flora.

University of Michigan, Ann Arbor, Michigan. Fossil mammals in Paleocene and Eocene continental sediments of Pakistan; and, molluscan genus *Bulinus*, intermediate hosts of *Schistosoma haematobium* (Egypt).

University of Pittsburgh, Pittsburgh, Pennsylvania. Desert rodent ecology (Egypt).

University of Toledo, Toledo, Ohio. Limnological investigations of Lake Ohrid (Yugoslavia); and limnological investigations of Polish freshwaters.

University of Washington, Pullman, Washington. United States participation in the First International Symposium on Avian Endocrinology (India).

University of Wisconsin, Milwaukee, Wisconsin. Limnological investigations of Skadar Lake (Yugoslavia).

Utah State University, Logan, Utah. Systems analysis of the pre-Saharan ecosystem of Southern Tunisia.

Yale University, New Haven, Connecticut. Paleanthropology, paleontology, and stratigraphy of Neogene deposits in Pakistan.

ASTROPHYSICS AND EARTH SCIENCES

National Air and Space Museum, Washington, D.C. Desert erosion and sand movement in Egypt.

National Museum of Natural History, Washington, D.C. Gravity survey of the Lonar Impact Crater, India.

Ohio State University, Columbus, Ohio. Absolute energy distribution of giant red stars (Poland).

Smithsonian Astrophysical Observatory, Cambridge, Massachusetts. Continuation of operation of Uttar Pradesh State Observatory/Smithsonian Astrophysical Observing Station, Naini Tal, India.

University of Chicago, Chicago, Illinois. Nucleosynthesis and the advanced stages of stellar evolution (Poland).

University of Colorado, Boulder, Colorado. Geochronology of Upper Cretaceous to Upper Miocene marine and continental sediments (Poland).

University of Pennsylvania, Philadelphia, Pennsylvania. Geochronology of the alkaline complexes of the Southeastern Desert of Egypt; laboratory studies of Libyan Desert silica glass (Egypt).

University of Wisconsin, Madison, Wisconsin. Geodynamic evolution of Pakistan.

MUSEUM PROGRAMS

American Research Center in Egypt, Princeton, New Jersey. Luxor Museum multilingual catalog and labeling (Egypt).

Carnegie Museum of Natural History, Pittsburgh, Pennsylvania. Plant Preparator Training Seminar (India).

Franklin Institute, Philadelphia, Pennsylvania. The History of American Industrial Technology exhibition (India).

Maryland Institute, College of Art, Baltimore, Maryland. Polish posters and graphics.

National Museum of History and Technology, Washington, D.C. Cooperative museum exchange (India).

National Trust for Historic Preservation, Washington, D.C. United States participation in UNESCO/ICOMOS meeting on inventory of cultural property systems (Poland).

Woodrow Wilson International Center for Scholars, Washington, D.C. Fellowship travel support (Poland and India).

APPENDIX 3. *National Museum Act Grants Awarded
in Fiscal Year 1977*

SEMINAR/WORKSHOP TRAINING

- The American Association for State and Local History, Nashville, Tennessee.**
The Hawaii Museums Association, Honolulu, Hawaii.
The Foundation of the American Institute for Conservation, Winterthur, Delaware.
The Pacific Regional Conservation Center, Honolulu, Hawaii.
The Oakland Museum Association, Oakland, California.
The Norwegian–American Museum, Decorah, Iowa.
The State Historical Society of Colorado, Denver, Colorado.
The New England Aquarium Corporation, Boston, Massachusetts.
The Association of Science–Technology Centers, Washington, D.C.

STIPEND SUPPORT FOR CONSERVATION STUDIES

- Miss Julia Seton, The University of London Institute of Archaeology, London, England.**
Mr. Alexander W. Katlan, Rosary College Graduate School of Fine Arts, Florence, Italy.
Miss Mayda S. Goodberry, The Philadelphia College of Textiles and Science, Philadelphia, Pennsylvania.
Miss Margaret J. Hoffman, The University of Arkansas, Fayetteville, Arkansas.
Mr. Harry J. Hunderman, The United States National Committee of the International Council of Monuments and Sites, Washington, D.C.
Miss Amy Hecker, The University of York, Heslington, York, England.
Miss Rhoda J. R. Komuro, Honolulu Academy of Arts, Honolulu, Hawaii.
Miss Lisa Minette Morriss, The Textile Conservation Centre Limited, East Molesey, Surrey, England.
Miss Linda Ellen Pillers, The Textile Conservation Centre Limited, East Molesey, Surrey, England.
Mr. Geoffrey Martin, College of the Holy Cross, Worcester, Massachusetts.
Mrs. Lilly Hollander, New York Public Library, New York, New York.
Mr. Gary Stewart, The University of South Dakota, Vermillion, South Dakota.
Miss Marlys Franc Thurber, School of Architecture and Planning, University of New Mexico, Albuquerque, New Mexico.

Miss Kendra D. Lovette, Missouri Botanical Garden, Saint Louis, Missouri.
Miss Stephanie Weinreich, Kelsey Museum, The University of Michigan, Ann Arbor, Michigan.
Miss Lorena Orvananos, Dwight D. Eisenhower Presidential Library, Abilene, Kansas.
Mr. Rodney Slemmons, International Museum of Photography, Rochester, New York.
Miss Christine Leback, The University of Delaware, Newark, Delaware.

STIPEND SUPPORT FOR GRADUATE/PROFESSIONAL EDUCATION AND TRAINING

Cooperstown Graduate Programs, Cooperstown, New York.
The Museum of Texas Tech University, Lubbock, Texas.
Yale University Art Gallery, New Haven, Connecticut.
The University of Michigan, Ann Arbor, Michigan.
The University of Delaware, Newark, Delaware.
The George Washington University, Washington, D.C.
The Museum of Early Southern Decorative Arts, Winston-Salem, North Carolina.
The University of Delaware, Newark, Delaware.
Conservation Center of the Institute of Fine Arts, New York, New York.
The University of Minnesota, Minneapolis, Minnesota.
The University of Denver, Denver, Colorado.
The University of Vermont, Burlington, Vermont.

STIPEND SUPPORT FOR MUSEUM INTERNSHIPS

Cooperstown Graduate Programs, Cooperstown, New York.
The University of Delaware, Newark, Delaware.
The Pacific Regional Conservation Center, Honolulu, Hawaii.
The Philadelphia Museum of Art, Philadelphia, Pennsylvania.
The Yale University Art Gallery, New Haven, Connecticut.
The University of Minnesota, Minneapolis, Minnesota.
The Museum of Fine Arts, Boston, Massachusetts.
The Rochester Museum and Science Center, Rochester, New York.

ADVANCED ACADEMIC DEGREE PROGRAM

Miss Ellen Jacobowitz, The Philadelphia Museum of Art, Philadelphia, Pennsylvania.
Miss Marjorie Swain, The University of Michigan, Ann Arbor, Michigan.
Mr. C. Tung Wu, The Museum of Fine Arts, Boston, Massachusetts.

- Mr. Frederick Lamp, The Museum of African Art, Washington, D.C.**
Miss Patricia Kane, Yale University, New Haven, Connecticut.
Mr. David Park Curry, The University of Kansas, Museum of Art, Lawrence, Kansas.

TRAVEL FOR MUSEUM PROFESSIONALS

- Miss Susan Ferleger, The Solomon R. Guggenheim Museum, New York, New York.**
Mr. Michael L. Mock, California Museum of Science and Industry, Los Angeles, California.
Mr. Terrell Hillebrand, Santa Barbara Museum of Art, Santa Barbara, California.
Mr. Charles Thomas Barger, Georgia Agrirama Development Authority, Tifton, Georgia.
Miss Barbara J. Burgan, Sedgwick County Zoological Society, Inc., Wichita, Kansas.
Mrs. Jacqueline Y. Miller, Allyn Museum of Entomology, Sarasota, Florida.
Miss Linda D. Marschner, The New York Botanical Garden, Bronx, New York.
Miss Janet A. Kamien, The Children's Museum, Boston, Massachusetts.
Mr. Robert A. Whyte, The San Francisco Museum of Art, San Francisco, California.
Miss Yin-wah Ashton, The Seattle Art Museum, Seattle, Washington.
Miss Judith Sims, The Laguna Gloria Art Museum, Austin, Texas.
Mr. Alan H. Shoemaker, The Columbia Zoological Park, Columbia, South Carolina.
Miss Joy Dell Mastrogiuseppe, Marion Ownbey Herbarium, Washington State University, Pullman, Washington.
Miss Eileen K. Schofield, New York Botanical Garden, Bronx, New York.
Mr. Carney E. S. Gavin, Harvard University Semitic Museum, Cambridge, Massachusetts.

SPECIAL STUDIES AND RESEARCH

- The Historical Society of York County, York, Pennsylvania**
The Conservation Center of the Institute of Fine Arts, New York, New York.
The University of California, Institute of Geophysics and Planetary Physics, Los Angeles, California.
The North Carolina State University, School of Textiles, Raleigh, North Carolina.
The University of California, Riverside, California.

PROFESSIONAL AND TECHNICAL ASSISTANCE

- The American Association of Museums, Washington, D.C.**
The National Conservation Advisory Council, Washington, D.C.

The American Association for State and Local History, Nashville, Tennessee.
The New England Regional Conference of the American Association of Museums, Lincoln, Massachusetts.
The Alaska State Museum, Juneau, Alaska.
The Contemporary Arts Museum of Houston, Houston, Texas.
The National Bureau of Standards/The University of Pennsylvania.
The Johnstown Flood Museum, Johnstown, Pennsylvania.

APPENDIX 4. *Progress on Building Construction, Restoration and Renovation*

Arts and Industries Building. Design and engineering for the major phase of roof repair have been completed. Construction work will be initiated in fiscal year 1978.

Chesapeake Bay Center for Environmental Studies. Construction of a new laboratory facility will begin in early fiscal year 1978. In addition, a new sewage-treatment plant is being developed for the CBCES site.

Cooper-Hewitt Museum of Design and Decorative Arts. Major restoration was completed in fiscal year 1977. Exterior repairs, canopy installation, a fire-detection system, fourth-floor decoration, and several other projects will be addressed in the coming year.

History and Technology Building. Design of the sixth-floor addition is 95 percent complete. Congressional appropriations have not yet been provided for construction. Plans and specifications for major repairs to the terrace are in progress.

National Zoological Park. In addition to the new lion-tiger facility, polar-bear and bear exhibits, and the new education-administration building, wheel chair ramps in various buildings were constructed, and extensive sidewalk improvements were made. A glockenspiel dedicated by the Pelzman Foundation was erected. Restaurant and other food service locations were improved.

Smithsonian Tropical Research Institute. The Tivoli Building restoration has been completed. Furnishing and equipping will be accomplished in fiscal year 1978. The initial phase of library facility started in fiscal year 1977. Scheduled completion of design is fiscal year 1978.

APPENDIX 5. *Publications of the Smithsonian Institution Press
in Fiscal Year 1977.*

GENERAL PUBLICATIONS

TRADE PUBLICATIONS

Agnes Chase. *First Book of Grasses: The Structure of Grasses Explained for Beginners*. 127 pages, 94 black-and-white illustrations. Third edition. Reissued February 23, 1977. \$6.95.

Frederick Gutheim. *Worthy of the Nation: The History of Planning for the National Capital*. xvii + 417 pages, 22 black-and-white illustrations. September 16, 1977. Cloth: \$22.50. Paper: \$8.95.

Allan A. Hodges and Carol A. Hodges, Editors. *Washington on Foot*. 208 pages, 124 black-and-white illustrations. Revised edition. May 20, 1977. Paper: \$3.75.

Cynthia J. McCabe. *The Golden Door: Artist-Immigrants of America, 1876-1976*. 432 pages, 39 color and 243 black-and-white illustrations. October 1, 1976. \$25.00.

Lillian B. Miller. *"The Dye Is Now Cast . . .": The Road to American Independence, 1774-1776*. xvi + 328 pages, 166 black-and-white illustrations. Reprint. January 3, 1977. \$25.00.

National Collection of Fine Arts. *Robert Rauschenberg*. 218 pages, 21 color and 259 black-and-white illustrations. March 29, 1977. \$25.00.

Phyllis D. Rosenzweig. *The Thomas Eakins Collection of the Hirshhorn Museum and Sculpture Garden*. 300 pages, 6 color and 246 black-and-white illustrations. September 30, 1977. \$25.00.

Susanne Steinem Patch. *Blue Mystery: The Story of the Hope Diamond*. 64 pages, 4 color and 24 black-and-white illustrations. November 4, 1976. \$6.95.

Jan E. Skrentny. *Zoobook*. 80 pages, 104 color and 42 black-and-white illustrations. December 13, 1976. Cloth: \$8.95. Paper: \$3.95.

ANNUAL REPORTS

American Historical Association. *Annual Report, 1975*. viii + 175 pages. November 23, 1976. Paper: \$1.65.

Chesapeake Bay Center for Environmental Studies. *Annual Report, 1976*. 16 pages. August 16, 1977.

National Zoological Park. *Three-Year Report, January 1, 1973-December 31, 1975*. 138 pages, 22 black-and-white illustrations. July 1, 1977.

Smithsonian Institution International Exchange Service. *Annual Report, 1976*. 9 pages. March 1, 1977.

Smithsonian Institution. *Smithsonian Year, 1976*. Report of the Smithsonian Institution for the Period July 1, 1975, through September 30, 1976. viii + 540 pages, 125 black-and-white illustrations. August 30, 1977. Paper: \$6.80.

———. *Statement by the Secretary. The Smithsonian Institution, 1976*. "The Attic Refurbished" by S. Dillon Ripley and "Financial Report" by T. Ames Wheeler. 75 pages, 17 black-and-white illustrations. January 25, 1977.

Smithsonian Tropical Research Institute. *Annual Report, 1976*. 20 pages, black-and-white illustrations. June 15, 1977.

EXHIBITION CATALOGUES

Anacostia Neighborhood Museum

Anacostia Neighborhood Museum, Smithsonian Institution, September 1967/1977. 42 pages, 122 black-and-white illustrations. September 15, 1977.

The Anacostia Story. xxviii + 158 pages, 4 color and 116 black-and-white illustrations, 12 maps. March 3, 1977. Paper: \$8.95.

Hirshhorn Museum and Sculpture Garden

Andrew Hudson. *14 Canadians: A Critic's Choice*. 80 pages, 14 color and 28 black-and-white illustrations. February 3, 1977. Paper: \$3.25.

Phyllis D. Rosenzweig. *The Thomas Eakins Collection of the Hirshhorn Museum and Sculpture Garden*. 240 pages, 5 color and 250 black-and-white illustrations. May 23, 1977. Paper: \$8.25.

The Photography of Leland Rice. 12 pages, 1 color and 7 black-and-white illustrations. June 13, 1977. Paper: \$.55.

National Collection of Fine Arts

Jacob Kainen: Prints, a Retrospective. 96 pages, 2 color and 152 black-and-white illustrations. November 19, 1976. Paper: \$4.00.

Renwick Gallery of the National Collection of Fine Arts

The Designs of Raymond Loewy. 56 pages, 29 black-and-white illustrations. Reprint. October 1, 1976. Paper: \$2.50.

The Object as Poet. 85 pages, 6 color and 58 black-and-white illustrations. December 30, 1976. Paper: \$5.00.

Paint on Wood. 36 pages, 14 color and 19 black-and-white illustrations. May 11, 1977. Paper: \$2.25.

Smithsonian Institution Traveling Exhibition Service

Anthony N. Landreau. *America Underfoot: The History of Floor Coverings*. ix + 76 pages, 8 color and 84 black-and-white illustrations. October 12, 1976.

EXHIBITION CHECKLISTS

Hirshhorn Museum and Sculpture Garden

The Arthur B. Carles Collection of the Hirshhorn Museum and Sculpture Garden. 4 pages, 7 black-and-white illustrations. August 18, 1977.

E. E. Cummings: The Poet as Artist. 16 pages, 71 black-and-white illustrations. November 23, 1976.

Peter Plagens: Works on Paper. 8 pages, 1 color and 4 black-and-white illustrations. November 23, 1976.

National Collection of Fine Arts

The Art of Poetry. 16 pages, 10 black-and-white illustrations. November 23, 1976.

Arthur Wesley Dow. 10 pages, 3 black-and-white illustrations. July 25, 1977.

China Revisited: Ink Paintings by Thomas George. 12 pages, 6 black-and-white illustrations. February 17, 1977. Paper: \$1.25.

John White Alexander, 1856–1915. 16 pages, 9 black-and-white illustrations. March 4, 1977.

Painting and Sculpture in California: The Modern Era. 23 pages, July 1, 1977.

Raíces y Visiones/Roots and Visions. 16 pages, 10 black-and-white illustrations. July 8, 1977.

BOOKS

Anacostia Neighborhood Museum

Zora Martin Felton. *A Walk through "Old" Anacostia.* iv + 44 pages, 34 black-and-white illustrations. Reprint. October 1, 1976.

National Museum of Natural History

J. Meester and H. W. Setzer, Editors. *The Mammals of Africa: An Identification Manual.* Fascicle V of V. Parts 1, 3.1, 6.8, 8, Conclusion, and Index. Loose-leaf inserts. August 11, 1977. \$5.00.

Office of Academic Studies

Smithsonian Opportunities for Research and Study in History, Art, Science. 152 pages. September 15, 1977.

Radiation Biology Laboratory

David L. Correll, John L. Edwards, and W. Shropshire, Jr. *Phytochrome: A Bibliography.* 411 pages. July 27, 1977.

Solar Radiation Measurements/1975–1976. 56 pages. October 1, 1976.

Research Institute on Immigration and Ethnic Studies

Paul Meadows, Mark LaGory, Linda Leue, and Peter Meadows. *Recent Immigration to the United States: The Literature of the Social Sciences.* 112 pages. October 22, 1976.

Renwick Gallery of the National Collection of Fine Arts

Elizabeth Wilder Weismann. *Americas: The Decorative Arts in Latin America in the Era of the Revolution.* 80 pages, 4 color and 71 black-and-white illustrations. October 12, 1976. Paper: \$6.80.

BOOKLETS

Chesapeake Bay Center for Environmental Studies

Bibliography of Research Conducted at the Chesapeake Bay Center for Environmental Studies, 1968–1976. 9 pages. February 15, 1977.

National Air and Space Museum

Wiley Post's "Winnie Mae." Reprint. March 31, 1977.

The Wright Brothers. Reprint. January 15, 1977.

National Collection of Fine Arts

Education Programs. 18 pages, 6 black-and-white illustrations. Revised reprint. October 22, 1976.

Information for Docents. 17 pages. Reprint. March 15, 1977.

National Museum of History and Technology

Rita J. Adrosko and Grace R. Cooper. *Spinning and Weaving.* 11 pages, 27 black-and-white illustrations. January 15, 1977. \$.85.

Don H. Berkebile. *Horse-Drawn Vehicles.* 12 pages, 30 black-and-white illustrations. June 9, 1977. \$.85.

Franklin Burns. *American Stamps.* 12 pages, 58 black-and-white illustrations. June 9, 1977. \$.85.

Tobia Frankel. *Steam Engines and Turbines.* 16 pages, 40 black-and-white illustrations. June 9, 1977. \$.85.

Paul V. Gardner. *American Glass.* 11 pages, 34 black-and-white illustrations. January 15, 1977. \$.85.

David A. Hounshell. *Telegraph, Telephone, Radio and Television.* 16 pages, 36 black-and-white illustrations. June 9, 1977. \$.85.

Peter Marzio. *Perfect Likenesses.* 28 pages, 2 illustrations. April 4, 1977.

Reidar Norby. *Foreign Stamps.* 12 pages, 75 black-and-white illustrations. June 9, 1977. \$.85.

Eugene Ostroff. *Photography.* 16 pages, 32 black-and-white illustrations. February 11, 1977. \$.85.

Carl Scheele. *American Post Offices.* 12 pages, 39 black-and-white illustrations. June 9, 1977. \$.85.

The Doll's House. 32 pages, 48 black-and-white illustrations. Revised reprint. March 31, 1977.

Pochoir. 22 pages, 5 color and 8 black-and-white illustrations. September 26, 1977.

Office of Elementary and Secondary Education

Let's Go to the Smithsonian: Learning Opportunities for Schools, 1977–1978. 28 pages, 44 black-and-white illustrations. August 5, 1977.

Office of Museum Programs

The Museum Support Center. 16 pages, 30 black-and-white illustrations. March 11, 1977.

National Museum Act Guidelines for 1978 Grant Programs. 32 pages. July 5, 1977.

Office of Public Affairs

Smithsonian Institution Welcome (In French, German, Spanish, and Japanese). 17 pages, 3 color illustrations. July 29, 1977.

Smithsonian Institution Welcome. 16 pages, 3 color illustrations. September 29, 1977.

FOLDERS

Chesapeake Bay Center for Environmental Studies

Chesapeake Bay Center for Environmental Studies. 6 black-and-white illustrations. December 23, 1976.

Microtrails/Macrotrails. 6 black-and-white illustrations. December 23, 1976.

Hirshhorn Museum and Sculpture Garden

Hirshhorn Museum and Sculpture Garden. Reprint. July 13, 1977.

National Air and Space Museum

Amelia Earhart. Reprint. March 30, 1977.

Charles A. Lindbergh and the Spirit of St. Louis. Reprint. June 10, 1977.

National Air and Space Museum (In French, German, and Spanish). April 5, 1977.

North American P-51 Mustang. Reprint. June 9, 1977.

Otto Lilienthal and Octave Chanute. Reprint. June 9, 1977.

The T-2 Airplane and the First Nonstop Coast-to-Coast Flight. Reprint. April 15, 1977.

National Collection of Fine Arts

From the Left Bank to Soho: Interactions in American Art and Literature, 1920-1970. March 15, 1977.

Inventory of American Paintings Executed before 1914. Revised reprint. March 15, 1977.

National Museum of History and Technology

The Honey Bee. Reprint. January 15, 1977.

Welcome to the National Museum of History and Technology. Reprint. January 15, 1977.

National Museum of Natural History

Indian Pipes by George Catlin. 4 color and 3 black-and-white illustrations. April 4, 1977.

National Museum of Natural History. February 21, 1977.

National Portrait Gallery

The Catalog of American Portraits. February 4, 1977.

Smithsonian Institution National Speakers Bureau. June 28, 1977.

Office of Elementary and Secondary Education

Art-to-Zoo (Newsletter). Published several times during the year.

Let's Go to the Smithsonian. Published several times during the year.

Office of Museum Programs

Smithsonian Institution Office of Museum Programs Workshop Series, April–September, 1977. January 21, 1977.

Smithsonian Institution Office of Museum Programs Workshop Series, October 1977–April 1978. June 30, 1977.

Office of Public Affairs

The Smithsonian Institution. 15 black-and-white illustrations. August 9, 1976.

Renwick Gallery of the National Collection of Fine Arts

Renwick Gallery of the National Collection of Fine Arts. Reprint. May 2, 1977.

Smithsonian Associates

Smithsonian Institution (Building Guide in French, German, Spanish, and Japanese). Reprint. August 5, 1977.

Smithsonian Tropical Research Institute

Smithsonian Tropical Research Institute. Revised reprint. March 1, 1977.

POSTERS

Smithsonian Institution Peace Corps Environmental Program. April 15, 1977.

Office of Academic Studies

Smithsonian Institution 1977–78 Programs in Higher Education and Research Training in: American History and Material Culture, Earth Sciences, Biological Sciences, Anthropology, Science and Technology, History of Art, and the Eppy Smithsonian Fellowships. August 1, 1977.

INVITATIONS

Hirshhorn Museum and Sculpture Garden

Thomas Eakins Collection of the Hirshhorn Museum and Sculpture Garden. April 20, 1977.

National Collection of Fine Arts

Arthur Wesley Dow. July 7, 1977.

The Art of Poetry. October 23, 1976.

Daniel Chester French: An American Sculptor. January 13, 1977.

High School Graphics V: Through the Eyes of New Printmakers. May 2, 1977.

Jacob Kainen: Prints, a Retrospective. October 19, 1976.

Mauricio Lansansky. March 1, 1977.

Painting and Sculpture in California. April 1, 1977.

Raíces y Visiones/Roots and Visions. June 9, 1977

Raphael Soyer. September 8, 1977.

Robert Rauschenberg. October 1, 1976.

25th National Exhibition of Prints. May 5, 1977.

Renwick Gallery of the National Collection of Fine Arts

Grass. July 11, 1977.

The Object as Poet and Stitch Pictures by Ethel Mohamed. November 11, 1976.

Paint on Wood. February 23, 1977.

22 Polish Textile Artists. May 27, 1977.

Smithsonian Associates

Treasures of Tutankhamun. October 28, 1976.

A Victorian Evening. April 15, 1977.

Smithsonian Institution Press

Worthy of the Nation. August 24, 1977.

FLYERS

National Air and Space Museum

To Fly. January 1977.

National Museum of History and Technology

Everyday Life of a Soldier and Ben Franklin's Experiments with Electricity. October 15, 1976.

National Museum of History and Technology (Exterior building inscriptions). July 25, 1977.

Renwick Gallery of the National Collection of Fine Arts

Americas: As Artes Decorativas na America Latina na Era da Revolucao. October 10, 1977.

Las Americas: las artes decorativas en America Latina en la era de la Revolucion. October 10, 1976.

MISCELLANEOUS

Anacostia Neighborhood Museum

Certificate of Distinguished Achievement. September 15, 1977.

Chesapeake Bay Center for Environmental Studies

Cover for *Work-Learn Programs in Environmental Studies*. December 12, 1976.

National Collection of Fine Arts

Portfolio Jacket for *Docent Information*. March 15, 1977.

Labels for pictures of the Collection. March 15, 1977.

National Zoological Park

Cards requesting that visitors not feed the animals. July 8, 1977.

Trail Map of the Zoo. July 8, 1977.

Office of Plant Services

Smithsonian Institution Telephone Directory. February 3, 1977.

SERIES PUBLICATIONS

SMITHSONIAN CONTRIBUTIONS TO ANTHROPOLOGY

20. Dennis J. Stanford. "The Walakpa Site, Alaska: Its Place in the Birnirk and Thule Cultures." 226 pages, 29 figures, 119 plates, 10 tables. December 1, 1976.

21. Owen S. Rye and Clifford Evans. "Traditional Pottery Techniques of Pakistan: Field and Laboratory Studies." 283 pages, 38 figures, 82 plates, 15 tables. November 1, 1976.

SMITHSONIAN CONTRIBUTIONS TO BOTANY

33. Mason E. Hale, Jr. "A Monograph of the Lichen Genus *Parmelina* Hale (Parmeliaceae)." 60 pages, 21 figures. October 22, 1976.

36. F. Raymond Fosberg and Marie-Hélène Sacht. "Flora of Micronesia, 3: Convolvulaceae." 34 pages, 1 figure. February 2, 1977.

37. Joan W. Nowicke and John J. Skvarla. "Pollen Morphology and the Relationship of the Plumbaginaceae, Polygonaceae, and Primulaceae to the Order Centrospermae." 64 pages, 200 figures, 5 tables. August 18, 1977.

SMITHSONIAN CONTRIBUTIONS TO EARTH SCIENCES

18. Arthur Roe and John S. White, Jr. "A Catalog of the Type Specimens in the Mineral Collection, National Museum of Natural History." 43 pages. November 22, 1976.
19. Brian Mason, editor. "Mineral Sciences Investigations 1974-1975." 125 pages, 48 figures, 37 tables. March 9, 1977.

SMITHSONIAN CONTRIBUTIONS TO THE MARINE SCIENCES

1. George J. Hollenberg and James N. Norris. "The Red Alga *Polysiphonia* (Rhodomelaceae) in the Northern Gulf of California." 21 pages, 10 figures. August 25, 1977.

SMITHSONIAN CONTRIBUTIONS TO PALEOBIOLOGY

30. Porter M. Kier. "Triassic Echinoids." 88 pages, 16 figures, 21 plates, 2 tables. January 28, 1977.
31. Martin A. Buzas, Roberta K. Smith, and Kenneth A. Beem. "Ecology and Systematics of Foraminifera in Two *Thalassia* Habitats, Jamaica, West Indies." 139 pages, 38 figures, 8 plates, 34 tables. July 11, 1977.
33. Richard H. Benson. "Evolution of *Oblitacythereis* from *Paleocosta* (Ostracoda: Trachyleberididae) during the Cenozoic in the Mediterranean and Atlantic." 47 pages, 11 figures, 4 plates. August 29, 1977.

SMITHSONIAN CONTRIBUTIONS TO ZOOLOGY

219. Louis S. Kornicker and I. G. Sohn. "Phylogeny, Ontogeny, and Morphology of Living and Fossil Thaumatoocypridacea (Myodocopa: Ostracoda)." 124 pages, 93 figures, 14 tables. December 20, 1976.
221. Kristian Fauchald. "Polychaetes from Intertidal Areas in Panama, with a Review of Previous Shallow-Water Records." 81 pages, 13 figures, 2 tables. April 25, 1977.
226. Daryl P. Domning. "Observations on the Myology of *Dugong dugong* (Müller)." 57 pages, 54 figures, 2 tables. January 5, 1977.
227. Ginter Ekis. "Classification, Phylogeny, and Zoogeography of the Genus *Perilypus* (Coleoptera: Cleridae)." 138 pages, 386 figures, 2 tables. March 31, 1977.
228. Ned E. Strenth. "A Review of the Systematics and Zoogeography of the Freshwater Species of *Palaemonetes* Heller of North America (Crustacea: Decapoda)." 27 pages, 6 figures, 1 table. October 22, 1976.
232. William D. Field and José Herrera. "The Pierid Butterflies of the Genera *Hypsochila* Ureta, *Phulia* Herrich-Shäffer, *Infraphulia* Field, *Pierphulia* Field, and *Piercolias* Staudinger." 64 pages, 198 figures, 5 maps. April 25, 1977.
235. Herbert Friedmann, Lloyd E. Kiff, and Stephen I. Rothstein. "A Further Contribution to Knowledge of the Host Relations of the Parasitic Cowbirds." 75 pages. February 17, 1977.
237. Robert H. Gore and Lawrence G. Abele. "Shallow Water Porcelain Crabs from the Pacific Coast of Panama and Adjacent Caribbean Waters (Crustacea: Anomura: Porcellanidea)." 30 pages, 4 figures, 3 tables. October 22, 1976.

238. A. G. K. Menon. "A Systematic Monograph of the Tongue Soles of the Genus *Cynoglossus* Hamilton-Buchanan (Pisces: Cynoglossidae)." 129 pages, 48 figures, 21 plates. April 25, 1977.
239. Christen M. Wemmer. "Comparative Ethology of the Large-spotted Genet (*Genetta tigrina*) and Some Related Viverrids." 93 pages, 37 figures, 18 tables. August 10, 1977.
240. H. H. Hobbs III and Horton H. Hobbs, Jr. "On the Troglobitic Shrimps of the Yucatan Peninsula, Mexico (Decapoda: Atyidae and Palaemonidae)." 23 pages, 8 figures, 2 maps. October 22, 1976.
241. Louis S. Kornicker and Francisca Elena Caraion. "West African Myodocopid Ostracoda (Cyprindinidae, Philomedidae)." 100 pages, 52 figures, 28 plates, 1 table. March 31, 1977.
242. W. Ronald Heyer. "Studies in Larval Amphibian Habitat Partitioning." 27 pages, 3 figures, 14 tables. October 29, 1976.
243. Arthur G. Humes. "Pseudanthessiid Copepods (Cyclopoida) Associated with Crinoids and Echinoids (Echinodermata) in the Tropical Western Pacific Ocean." 43 pages, 25 figures. January 21, 1977.
244. Horton H. Hobbs, Jr., H. H. Hobbs III, and Margaret A. Daniel. "A Review of the Troglobitic Decapod Crustaceans of the Americas." 183 pages, 70 figures, 1 table. May 31, 1977.
246. Roman Kenk. "Freshwater Triclad (Turbellaria) of North America, IX: The Genus *Sphalloplana*." 38 pages, 62 figures, 1 table. February 2, 1977.
247. Horton H. Hobbs, Jr., and Daniel J. Peters. "The Entocytherid Ostracods of North Carolina." 73 pages, 33 figures, 3 tables, 12 maps. February 17, 1977.
248. Robert P. Higgins. "Redescription of *Echinoderes dujardinii* (Kinorhyncha) with Descriptions of Closely Related Species." 26 pages, 31 figures, 2 tables. May 17, 1977.
252. Victor G. Springer, C. Lavett Smith, and Thomas H. Fraser. "*Anisochromis straussi*, New Species of Protogynous Hermaphroditic Fish, and Synonymy of the Anisochromidae, Pseudoplesiopidae, and Pseudochromidae." 15 pages, 2 figures, 4 tables. August 25, 1977.

SMITHSONIAN CONTRIBUTIONS TO HISTORY AND TECHNOLOGY

34. Peter C. Marzio. "The Art Crusade: An Analysis of American Drawing Manuals, 1820-1860." 94 pages, 47 figures. October 27, 1976.
35. Thomas Parke Hughes. "Science and the Instrument-makers: Michelson, Sperry, and the Speed of Light." 18 pages, 9 figures, 2 tables. October 5, 1976.
38. Helen R. Hollis. "The Musical Instruments of Joseph Haydn: An Introduction." 33 pages, 18 figures. May 23, 1977.

ATOLL RESEARCH BULLETINS

192. A. Binion Amerson, Jr., and Philip C. Shelton. "The Natural History of Johnston Atoll, Central Pacific Ocean." xix + 479 pages, 117 figures, 91 tables. December 1976.
- 193-205. In one volume, as follows. February 1977.
193. Edward A. Drew. A Photographic Survey Down the Seaward Reef-Front of Aldabra Atoll. ii + 17 pages, 6 figures, 3 plates.

194. Carden C. Wallace and E. R. Lovell. "Topography and Coral Distribution of Bushy and Redbill Islands and Surrounding Reef, Great Barrier Reef, Queensland." 27 pages, 3 figures, 3 plates.
195. P. G. Flood. "Coral Cays of the Capricorn and Bunker Groups, Great Barrier Reef Province, Australia." 24 pages, 8 figures, 10 plates.
196. Lee C. Gerhard. "Submarine Cementation of Grainstone Fabric, St. Croix, U.S. Virgin Islands. 9 pages, 5 figures.
197. Mark J. Valencia. "Christmas Island (Pacific Ocean): Reconnaissance Geologic Observations." 17 pages, 5 figures.
198. Roger B. Clapp. "Notes on the Vertebrate Fauna of Tongareva Atoll." 8 pages, 1 table.
199. Mary E. Gillham. "Observations on Vegetation of Blue-Faced Booby Colonies on Cosmoledo Atoll, Western Indian Ocean." 11 pages.
200. Mary E. Gillham. "Vegetation of Sea and Shore-Bird Colonies on Aldabra Atoll." 19 pages, 1 table.
201. C. B. Frith. "Life History Notes on Some Aldabran Land Birds." 17 pages, 1 figure.
202. D. R. Stoddart and L. U. Mole. "Climate of Aldabra Atoll." 27 pages, 6 figures, 15 tables.
203. Gérard Faure. "Annotated Check List of Corals in the Mascarene Archipelago, Indian Ocean." 26 pages, 1 table.
204. Gérard Faure. "Annotated Check List of Octocorallia in the Mascarene Archipelago, Indian Ocean." 13 pages.
205. A. J. Bruce. "The Hosts of the Coral-Associated Indo-West-Pacific Pontonine Shrimps." 19 pages with frontispiece.
- 206-207. In one volume, as follows. May 1977.
206. Roger B. Clapp and Eugene Kridler. "The Natural History of Necker Island, Northwestern Hawaiian Islands." iv + 102 pages, 16 figures, 25 tables.
207. Roger B. Clapp, Eugene Kridler, and Robert R. Fleet. "The Natural History of Nihoa Island, Northwestern Hawaiian Islands." v + 147 pages, 32 figures, 34 tables.
- 208-219. In one volume, as follows. May 1977.
208. Wm. Randolph Taylor. "Notes on Plants on the Genus *Caulerpa* in the Herbarium of Maxwell S. Doty at the University of Hawaii." 17 pages.
209. Wm. Randolph Taylor. "Marine Algae of the Te Vega 1965 Expedition in the Western Pacific Ocean." 16 pages.
210. H. E. Hackett. "Marine Algae Known from the Maldiv Islands." 32 pages, 2 figures.
211. Judith L. Connor and Walter H. Adey. "The Benthic Algal Composition, Standing Crop, and Productivity of a Caribbean Algal Ridge." 40 pages, 17 figures, 5 tables.
212. Roy T. Tsuda, Steven S. Amesbury, and Steven C. Moras. "Preliminary Observations on the Algae, Corals, and Fishes Inhabiting the Sunken Ferry 'Fujikawa Maru' in Truk Lagoon." 6 pages.
213. A. Donaldson and B. A. Whitton. "Chemistry of Freshwater Pools on Aldabra." 28 pages, 9 figures, 7 tables.

214. B. A. Whitton and M. Potts. "Observation of Redox Potential in Freshwater Pools on Aldabra." 6 pages, 1 table.
215. A. Donaldson and B. A. Whitton. "Algal Flora of Freshwater Habitats on Aldabra." 26 pages, 1 figure, 2 tables.
216. B. A. Whitton and A. Donaldson. "Terrestrial and Freshwater Algae of Three Western Indian Ocean Islands (Astove, Farquhar and St. Pierre)." 8 pages, 1 table.
217. B. A. Whitton, A. Donaldson, D. J. Bellamy, and C. Sheppard. "Terrestrial and Swamp Algae from Three Islands in the Chagos Archipelago, Indian Ocean." 9 pages, 5 tables.
218. Walter H. Adey, Patricia J. Adey, Randolph Burke, and Leslie Kaufman. "The Holocene Reef Systems of Eastern Martinique, French West Indies." 40 pages, 14 figures, 4 tables.
219. "Island News and Comment." 30 pages.

APPENDIX 6. *Publications of the Staff of the Smithsonian Institution and Its Subsidiaries in Fiscal Year 1977*

Publications are by staff members unless otherwise noted.

SCIENCE

NATIONAL MUSEUM OF MAN, CENTER FOR THE STUDY OF MAN

National Anthropological Film Center

Sorenson, E. Richard. "Growing Up As A Fore Is To Be 'In Touch' And Free." *Smithsonian Magazine*, May 1977.

Sorenson, E. Richard. "Growing Up As A Fore Is To Be 'In Touch' And Free." *culturation: A Preliminary Report.* In *Enculturation in Latin America: An Anthology*, edited by Johannes Wilbert. Los Angeles: UCLA Latin American Center Publications, 1976.

Research Institute on Immigration and Ethnic Studies

Bryce-Laporte, Roy S., and Stephen R. Couch, editors. *Exploratory Fieldwork on Latino Migrants and Indochinese Refugees.* Washington, D.C.: Smithsonian Institution, 1976.

Bryce-Laporte, Roy S., and Delores M. Mortimer, editors. *Caribbean Immigration to the United States.* Washington, D.C.: Smithsonian Institution, 1976.

Hune, Shirley. *Pacific Migration to the United States: Trends and Themes in Historical and Sociological Literature.* Washington, D.C.: Smithsonian Institution, 1977.

Meadows, Paul, Mark LaGory, Linda Leue, and Peter Meadows. *Recent Immigration to the United States: The Literature of the Social Sciences.* Washington, D.C.: Smithsonian Institution Press, 1976.

CHESAPEAKE BAY CENTER FOR ENVIRONMENTAL STUDIES

Allan, J. David, Thomas G. Kinsey, and Melody C. James. "Abundances and Production and Copepods in the Rhode River Subestuary of Chesapeake Bay." *Chesapeake Bay Science*, volume 17, number 2 (1976), pages 86-92.

Atterbury, G. E. "'CBCES': Help for Bay Communities." *Chesapeake Bay Magazine*, volume 6, number 4 (1976), pages 20-21.

Beane, Marjorie. "Forest Fragmentation Leads to a Decline in Bird Species Diversity." *Research Reports*, Smithsonian Institution, Summer 1977, pages 3-4.

———. *Assessing Non-Point Source Pollution: A Detailed Study of a Rural Watershed in the Coastal Plain of Maryland.* Washington, D.C.: Smithsonian Institution, 1977.

———. *The Effects of Land Use on Water Quality: A Summary of Research Findings on Non-Point Source Pollution.* Washington, D.C.: Smithsonian Institution, 1977.

- . *Environmental Communications and the Information Transfer Process: A Model Approach for the Chesapeake Bay Region*. Washington, D.C.: Smithsonian Institution, 1977.
- Branscomb, E. S. "Proximate Causes of Mortality Determining the Distribution and Abundance of the Barnacle *Balanus improvisus* Darwin in Chesapeake Bay." *Chesapeake Bay Science*, volume 17, number 4 (1976), pages 281–288.
- Carney, J. F., and R. R. Colwell. "Heterotrophic Utilization of Glucose and Glutamate in an Estuary: Effect of Season and Nutrient Load." *Applied and Environmental Microbiology*, volume 31, number 2 (1976), pages 227–233.
- Chirlin, Gary R. *Non-Point Source Studies on Chesapeake Bay: IV. Weekly Surface Hydrology of Seven Sub-Basins within the Rhode River Watershed, Calendar Years 1974–76*. Chesapeake Research Consortium, publication number 57, 1977.
- Chirlin, Gary R., and D. L. Correll. "A Linear Approach to the Calculation of Area Yield Coefficients Based on Land Use." In *Watershed Research in Eastern North America*. Washington, D.C.: Smithsonian Institution, 1977.
- Chirlin, Gary R., and R. W. Schaffner. "Observations on the Water Balance for Seven Sub-Basins of the Rhode River, Maryland." In *Watershed Research in Eastern North America*. Washington, D.C.: Smithsonian Institution, 1977.
- Correll, D. L., "The Relative Contribution of Point and Non-Point Sources of Nutrients and Pathogens." In *Water Quality Goals for Chesapeake Bay—What Are They and How Can They Be Achieved?* Virginia Polytechnic Institute and State University, publication number 708, pages 19–31. Blacksburg, Virginia, 1976.
- Correll, D. L. and J. J. Miklas. "Phosphorus Cycling in a Maryland Deciduous Forest Subjected to Various Levels of Mineral Nutrient Loading." In *Mineral Cycling in Southeastern Ecosystems*, edited by F. G. Howell, J. B. Gentry, and M. H. Smith. ERDA Symposium Series Conference—740513. 1976.
- Correll, D. L., E. S. Friebele, and J. Miklas. *Non-Point Source Studies on Chesapeake Bay: II. Nutrients in Land Runoff from Rhode River Watersheds in 1975 and 1976*. Chesapeake Research Consortium, publication number 55, 1977.
- Correll, D. L., J. W. Pierce, and M. A. Faust. "A Quantitative Study on the Nutrient, Sediment and Coliform Bacterial Constituents of Water Runoff from the Rhode River Watershed." In *Proceedings of a Southeastern Regional Conference on Non-Point Sources of Water Pollution*. Virginia Polytechnic Institute and State University, pages 131–143. Blacksburg, Virginia, 1975.
- Correll, D. L., T. L. Wu, E. S. Friebele, and J. Miklas. "Nutrient Discharges from Rhode River Watersheds and Their Relationship to Land Use Patterns." In *Watershed Research in Eastern North America*. Washington, D.C.: Smithsonian Institution, 1977.
- Drake, B. J. "Estimating Water Status and Biomass of Plant Communities by Remote Sensing." *Ecological Studies*, 19 pages. Berlin: Springer-Verlag, 1976.
- . "Seasonal Changes in Reflectances and Standing Crop Biomass in Three Salt Marsh Communities." *Plant Physiology*, volume 58 (1976), pages 696–699.
- Falk, J. H. "The Frenetic Life Forms that Flourish in Suburban Lawns." *Smithsonian*, April 1977, pages 90–86.
- Faust, M. A. "Coliform Bacteria from Diffuse Sources as a Factor in Estuarine Pollution." *Water Research*, volume 10 (1976), pages 619–627.
- . *Non-Point Source Studies on Chesapeake Bay: I. Bacterial Contami-*

- nation from the Rhode River Watershed, Concentrations and Survival Studies in the Estuary. Chesapeake Research Consortium, publication number 53, 1976.
- Faust, M. A., and D. L. Correll. "Comparison between Bacterial and Algal P-Uptake in an Estuarine Environment." *Marine Biology*, volume 34 (1976), pages 151-162.
- . "Autoradiographic Study to Detect Metabolically Active Phytoplankton and Bacteria in the Rhode River Estuary." *Marine Biology*, volume 41 (1977), pages 293-305.
- Faust, M. A., and N. M. Goff. "Basin Size, Water Flow and Land Use Affects on Fecal Coliform Pollution from a Rural Watershed." In *Watershed Research in Eastern North America*. Washington, D.C.: Smithsonian Institution, 1977.
- Faust, M. A., N. M. Goff, and A. C. Jackson. *Non-Point Source Studies on Chesapeake Bay: III. Relationship between Bacterial Contamination and Land Use in the Rhode River Watershed, and Survival Studies of Streptococcus Faecalis in the Estuary*. Chesapeake Research Consortium, publication number 56, 1977.
- Miklas, J., T. L. Wu, A. Hiatt, and D. L. Correll. "Nutrient Loading of the Rhode River Watershed via Land Use Practice and Precipitation." In *Watershed Research in Eastern North America*. Washington, D. C.: Smithsonian Institution, 1977.
- Pierce, J. W. *Non-Point Source Studies on Chesapeake Bay: IV. Particulates*. Chesapeake Research Consortium, publication number 59, 1977.
- Pierce, J. W., and F. T. Dulong. "Discharge of Suspended Particulates from Rhode River Subwatersheds." In *Watershed Research in Eastern North America*. Washington, D.C.: Smithsonian Institution, 1977.
- Roberts, W. P., and J. W. Pierce. "Deposition in the Upper Patuxent Estuary, Maryland, 1968-69." *Estuarine and Coastal Marine Science*, volume 4 (1976), pages 267-280.
- Wu, T. L., and M. Hoopes. "Land Utilization and Metals Discharge from Rhode River Watersheds." In *Watershed Research in Eastern North America*. Washington, D.C.: Smithsonian Institution, 1977.
- . *Non-Point Source Studies on Chesapeake Bay: VII. Cations*. Chesapeake Research Consortium, publication number 60, 1977.
- Wu, T. L., and N. Mick. "Runoff Studies of the Agricultural Herbicides, Alachlor and Atrazine from Rhode River Watershed during the 1976 Growing Season." In *Watershed Research in Eastern North America*. Washington, D.C.: Smithsonian Institution, 1977.

NATIONAL AIR AND SPACE MUSEUM

- Collins, Michael. "Showing Lindbergh the Air and Space Museum." *Saturday Review*, April 1977.
- . "The Space Shuttle." *Smithsonian*, May 1977.
- Zisfein, M. B. "The National Air and Space Museum." *Museum*, Summer 1977.

Center for Earth and Planetary Studies

- Andre, C. G., I. Adler, R. W. Wolfe, J. R. Weidner, and J. A. Philpotts. "Chemical Character of the Partially Flooded Smythii Basin from Al/Si Orbital X-ray Data." [Abstract] *Lunar Science VIII*, Lunar Science Institute, Houston, Texas, pages 37-39. 1977.
- D'Alli, R. E. "The Significance of Bright Spots Observed During the 1971 Martian Dust Storm." *Icarus*, volume 31 (1977), pages 146-156.

- El-Baz, Farouk. "Evolution of the Lunar Crust: The Stratigraphic Approach." [Abstract] In *Chemical Evolution-Comparative Planetology*, College Park Colloquium (September–October 1976), University of Maryland, page 21.
- . "*Dirasat Al-Ard min Al-Fada* (Study of the Earth from Space, in Arabic)." From the Fruits of Thought, The First Cultural Season—1976, Qatar National Press, Doha, Qatar, pages 85–97.
- . "Lunar Stratigraphy." In *The Moon—A New Appraisal from Space Missions and Laboratory Analyses*. *Philosophical Transactions of the Royal Society*, London, England. A 285 (1977), pages 549–553.
- . "Dune Migration on Earth and Mars." *Internet Reports*, number 75. Concord, Massachusetts: Internet, 1977.
- . "*La recolte 'Apollo' sur la lune* (Results of the Apollo Lunar Missions, in French)." *Journal D'Egypt*, February 1977, pages 4–6.
- . "Harvest of Apollo Science." *Education*, Qatar National Commission for Education, Culture and Science, Number 19 (February 1977), pages 10–11.
- . "*Al-Tarikh Al-Geology le Sath Al-Qamar wa Elm Muqgaranat Al-Kawakib* (The Geologic History of the Moon and Comparative Planetology, in Arabic)." *Al-Elm (Science)*, Cairo, Egypt, volume 13 (March 1977), pages 30–34.
- . "*Risala* (A Message, in Arabic)." [Introduction] *Al-Shabab ela ayn (Youth)*, by H. Tantawi, pages 11–14. Cairo: Dar El-Shab Press, 1977.
- . [Review] *Space Geology: An Introduction*, by Elbert A. King. *EOS*, Transcripts of the American Geophysical Union, volume 58, number 3 (1977), page 133.
- . "NASA-Lunar Polar Orbiter." Witness Testimony before the Subcommittee of the Committee on Appropriations, House of Representatives, 95th Congress, First Session. *Department of Housing and Urban Development—Independent Agencies Appropriations for 1978*, Part 7, pages 289–291, 1977.
- . "Expanding Desert Creates Grim Beauty But Also Threatens Crucial Cropland." *Smithsonian*, volume 8, number 3 (June 1977), pages 34–41 and 122.
- . "Onslaught on the Nile: Shifting Dunes Threaten Egypt's Breadbasket." [Also published in French, Spanish, Russian, German, Arabic, Japanese, Italian, Hindi, Tamil, Hebrew, Persian, Dutch, Portugese, Turkish, and Urdu translations] *The UNESCO Courier*, July 1977, pages 23–24 and 33.
- El-Baz, F., and D. E. Wilhelms. *Geologic Map of the East Side of the Moon*. Map I-948. Washington, D.C.: U.S. Geological Survey, 1977.
- Head, J. W., and A. W. Gifford. "Lunar Mare Domes: Classification and Modes of Origin." In *Lunar Science VIII*, Lunar Science Institute, Houston, Texas, pages 418–420. 1977.
- Maxwell, T. A. *Stratigraphy and Tectonics of Southeastern Serenitatis*. [Ph.D. Dissertation] Salt Lake City, Utah: University of Utah, 1977.
- Maxwell, T. A., and F. El-Baz. "Mare Stratigraphy of Southeastern Serenitatis." In *Lunar Science VIII*, Lunar Science Institute, Houston, Texas, pages 631–633. 1977.
- Maxwell, T. A., P. L. Strain, and F. El-Baz. "Analysis of Low Altitude X-Ray Fluorescence Data From Mare Crisium and Mare Smythii." In *Lunar Science VIII*, Lunar Science Institute, Houston, Texas, pages 634–636. 1977.
- Strain, P. L., and F. El-Baz. "Topography of Sinuous Rilles in the Harbinger Mountains Region of the Moon." *The Moon*, volume 16 (1977), pages 221–229.
- Wolfe, R. W., and F. El-Baz. "Photogeology of the Multi-Ringed Crater Haldane in Mare Smythii." In *Proceedings of the Seventh Lunar Science Con-*

ference, [Supplement 7, *Geochim. et Cosmochim. Acta*], volume 3, pages 2903–2912. Cambridge, Massachusetts: M.I.T. Press, 1976.

Department of Aeronautics

- Boyne, Walter J. "The New National Air and Space Museum." *Aviation Quarterly*, volume 2, number 3.
- . "The Gallery of Air Transportation." *Aviation Quarterly*, volume 2, number 4.
- . "Aircraft—Great and Not So Great." *Aviation Quarterly*, volume 3, number 1.
- . "Howell Miller and the Gee Bee Story." *Aviation Quarterly*, volume 3, number 2.
- . "Renaissance at Silver Hill." *Airpower*, January 1977.
- . "The Custer Channel Wing." *Airpower*, May 1977.
- . "Odd Aircraft." *Airpower*, May 1977.
- . "The Hughes D-2." *Wings*, June 1977.
- . "The Next 50 Years." *Pan American Clipper*, July 1977.
- . "The Hughes H-1." *Wings*, September 1977.
- Casey, Louis S., and John Batchelor. *Naval Aircraft 1911–1938*. London: Phoebus Publishing Co., 1977.
- . *Naval Aircraft 1911–1945*. London: Hamlyn Publishing Co., 1977.
- Mikesh, Robert C. *Japanese Cockpit Interiors, Part I*. Monogram Books, 1976.
- . "Bicentennial Warhawk." *Wings*, October 1976.
- . "Restoring the P-40." *Koku Fan*, October 1976.
- . "Emily: She Was No Lady." *Air Classics Quarterly*, November 1976.
- . "Tachikawa's Flying Gas Tanks." *Koku Fan*, December 1976.
- . "Japan's Exported War Booty." *Koku Fan*, February 1977.
- . "'00,' Year of the Tiger." *Airpower*, March 1977.
- . "The Smithsonian's Zero," Part I. *Koku Fan*, March 1977.
- . "The Smithsonian's Zero," Part II. *Koku Fan*, April 1977.
- . "The Japanese 'Gooney'." *Air Line Pilot*, April 1977.
- . "How England's Canberra Joined the USAF." *Wings*, August 1977.
- . "Building the Canberra, Part II of the B-57 Story." *Airpower*, September 1977.

Department of Astronautics

- Crouch, Tom D. "Americans and the Airplane, part 3." *Aviation Quarterly*, volume 2, number 3 (Third Quarter 1976).
- . "Americans and the Airplane, part 4." *Aviation Quarterly*, volume 3, number 4 (Fourth Quarter 1976).
- . "Washington Harrison Donaldson: Aerial Showman." *Aviation Quarterly*, volume 4, number 1 (First Quarter 1977).
- Durant, F. C., III. "Wernher von Braun—In Memoriam." *Astronautics and Aeronautics*, volume 15, number 7 (July–August 1977).
- Winter, Frank H. "Buffalo Balloon Carries Airmail Postage." *Linn's Stamp News*, volume 50, number 25 (June 13, 1977), pages 50–51.
- . "Birth of the Vfr: The Start of Modern Astronautics." *Spaceflight*, volume 19, numbers 7–8, pages 243–256.

Department of Science and Technology

- Hallion, Richard P. *Legacy of Flight: The Guggenheim Contribution to American Aviation*. Seattle: University of Washington Press, 1977.

- . "The American Buzz Bombs." *Aeroplane Monthly*, volume 4, number 11 (November 1976), pages 566–571.
- . "American Flight Research and Flight Testing: An Overview from the Wright Brothers to the Space Shuttle." *Cockpit: The Magazine of the Society of Experimental Test Pilots*, January–February 1977.
- . "The Northrop X-4." *Air Enthusiast Quarterly*, number 3 (1976).
- . "The Douglas X-3." *Air Enthusiast Quarterly*, number 4 (1977).
- . "Twilight of the Piston-Powered Airplane: The Republic XF-12/RC-2 Rainbow." *Aviation Quarterly*, volume 3, number 1, (1977).
- Hanle, Paul A. [Review] *The History of Quantum Theory*, by Friedrich Hund. *ISIS*, volume 67 (December 1976), pages 625–626.
- . "The Coming of Age of Erwin Schrödinger: His Quantum Statistics of Ideal Gases." *Archive for History of Exact Sciences*, volume 17.

Presentation and Education Division

- Bondurant, Russell Lynn. "A Grave Situation." *Instructor*, volume 86, number 8 (April 1977), page 111–114.
- . "From Kitty Hawk to the Moon and Beyond—A Visit to the New National Air and Space Museum." *AIAA Student Journal*, volume 15, number 1 (Spring 1977), pages 22–24.
- Chamberlain, Von Del. "Sky Interpretation Update." *In Touch*, National Park Service Newsletter, May 1977, pages 16–17.
- . "Sky Interpretation: A Project of the American Astronomical Society." *Journal of the Association of Interpretive Naturalists*, August 1977.
- , editor. *Sky Interpretation Resource Bulletin, Volume II* (1977). Published and distributed by the American Astronomical Society with funds by the National Science Foundation.
- Snider, Harold. "The Inviting Air of an Accessible Space." *Museum News*, January-February 1977, pages 18–23.
- . "Museums & the Blind." *Arts for the Blind & Visually Impaired Educational Facilities Laboratory*, June 1977.
- . "Museums & the Blind—A Look Ahead." *Braille Monitor*, September 1977.

NATIONAL MUSEUM OF NATURAL HISTORY

Department of Anthropology

- Angel, J. Lawrence. "Colonial to Modern Skeletal Change in the U.S.A." *American Journal of Physical Anthropology*, volume 45, number 3 (1976), pages 723–736.
- . "Introduction to Symposium in Honor of T. Dale Stewart (ed. J. L. Angel)." *American Journal of Physical Anthropology*, volume 45, number 3 (1976), pages 519–530.
- Angel, J. Lawrence, and Donald G. Cherry. "Personality Reconstruction From Unidentified Remains." *FBI Law Enforcement Bulletin*, volume 46, number 8 (1977), pages 12–15.
- Briggs, Marion F., and Sarah D. McAnulty. *The Ghost Dance Tragedy at Wounded Knee*. Washington, D.C.: Smithsonian Institution, Office of Printing and Photographic Services, 1977.
- Crocker, William H. "O Movimento Messiânico dos Canelas: Uma Introdução." In *Leituras de Etnologia Brasileira*, edited by E. Schaden, pages 515–527. São Paulo: Companhia Editora Nacional (Biblioteca Universitária, Série 2ª—Ciências Sociais, volume 7), 1976.

- Evans, Clifford. "Background and Introduction." In *Symposium: New Research Designs Applied to Paleo-Indian Problems: Some Preliminary Results. Actas del XLI Congreso Internacional de Americanistas*, volume 3 (1976), pages 458-461.
- Ewers, John C. "Spanish Cattle in Plains Indian Art." *Great Plains Journal*, volume 16, number 1 (Fall 1976), pages 66-76.
- . "Foreword." In *Cyrus E. Dallin, Let Justice Be Done*, by Rell G. Francis. Springville, Utah: Springville Museum of Art in cooperation with Utah American Bicentennial Committee, 1976.
- . "Five Strings to his Bow. The Remarkable Career of William (Lone Star) Dietz: Artist, Athlete, Actor, Teacher, Football Coach." *Montana: The Magazine of Western History*, volume 27, number 1 (Winter 1977), pages 2-13.
- . "The Making and Uses of Maps by Plains Indian Warriors." By *Valor and Arms*, volume 3, number 1 (1977), pages 36-43.
- Fitzhugh, William. "William Fitzhugh Comments on David Yesner's Review of Prehistoric Maritime Adaptations of the Circumpolar Zone." *Reviews in Anthropology*, volume 3, number 5 (1976), pages 486-495.
- . "Tribute to Explorer Lost in Labrador," *Smithsonian Magazine*, December 1976, pages 109-119.
- . "Population Movement and Cultural Change on the Central Labrador Coast." *Annals of the New York Academy of Sciences*, volume 288 (February 1977), pages 481-497.
- . "Regional Repositories: A View from the Smithsonian." In *Regional Centers in Archaeology: Prospects and Problems*, edited by William H. Marquardt, pages 18-19. *Missouri Archaeological Society Research Series*, number 14, 1977.
- Gibson, Bethune M. "Conservation of a Fan." *Journal of the American Institute for Conservation*, volume 16, number 2 (February 1977), pages 3-11.
- Gibson, Gordon D. "Himba Epochs." *History in Africa*, volume 4 (1977), page 67-121.
- Goddard, R. H. Ives, III. "Some Early Examples of American Indian Pidgin English." *International Journal of American Linguistics*, volume 43 (1977), pages 37-41.
- . "The Morphologization of Algonquian Consonant Mutation." In *Proceedings of the Third Annual Meeting of the Berkeley Linguistics Society*, pages 241-250. Berkeley, California, 1977.
- . "Philological Approaches to the Study of North American Indian Languages: Documents and Documentation." In *Native Languages of the Americas*, edited by Thomas A. Sebeok, volume I, pages 73-91. New York and London: Plenum Press.
- . [Review] *Riding on the Frontier's Crest: Mahican Indian Culture and Culture Change*, by Ted J. Brassler. *Ethnohistory*, volume 22 (1975 [1976]), page 185-187.
- . [Review] *Indian Names in Connecticut*, by J. Hammond Trumbull. *International Journal of American Linguistics*, volume 43 (1977).
- Hassan, Afifa A., and Donald J. Ortner. "Inclusions in Bone Material as a Source of Error in Radiocarbon Dating." *Archaeometry*, volume 19 (1977).
- Houchins, Chang-Su. "Kõnch'uk kwa hoehwa: ch'oech'o ũi Man'guk minhwa sujip (Architecture and Graphics: Introduction to the Bernadou Collection of Korean Folk Paintings in U. S. National Museum.)" *Kõnch'uk Man'guk (Korean Architecture)*, pages 50-51. Seoul, Korea, September 1976.
- . "The Five Blessings and Korean Coin Charms: A Phychocultural Analysis." *Korea Journal*, volume 17, number 2 (February 1977), pages 12-26. Seoul, Korea: UNESCO Korean Commission.
- Koritzer, Richard T. [Abstract] "Dental Caries." *American Journal of Physical Anthropology*, volume 47, number 1 (1976), page 143.

- . "An Anthropological Approach to the Study of Dental Pathology." In *Orofacial Growth and Development*, edited by Albert A. Dahlberg and Thomas Graber, pages 283–299. 1977.
- . "Dental Caries and Enamel Trace Elements in Potomac Indians." *Georgetown Dental Journal*, volume 41, number 2 (1977).
- Laughlin, Robert M. "Of Wonders Wild and New: Dreams from Zinacantán." *Smithsonian Contributions to Anthropology*, number 22, 1976.
- Levy, John D., and Richard T. Koritzer. "Enamel, Silicon, and Fluoride Relationships Demonstrating a Surface Silicon Effect and Facilitating Fluoride Uptake." *Journal of Dental Research*, volume 55, number 5 (1976), pages 733–737.
- McAnulty, Sarah D. "Angel DeCora: American Indian Artist and Educator." *Nebraska History*, volume 57 (1976), pages 143–199.
- Meggers, Betty J. "Introductions" and "Concluding Remarks." In *Symposium: Effects of Environmental Differences on the Transition from Hunting and Gathering to Settled Life in the Peruvian Highlands. Actas del XLI Congreso Internacional de Americanistas*, volume 3 (1976), pages 530–531 and 590–591.
- . "Vegetational Fluctuation and Prehistoric Cultural Adaptation in Amazonia: Some Tentative Correlations." *World Archaeology*, volume 8 (1977), pages 287–303.
- Meggers, Betty J., and Clifford Evans. "Early Formative Period Chronology of the Ecuadorian Coast: A Correction." *American Antiquity*, volume 42 (1977), pages 266.
- Ortner, Donald J. "The Paleopathology Program at the Smithsonian Institution: Purposes and Present Status." *Bulletin of the New York Academy of Medicine*, volume 52, number 10 (1976), pages 1197–1206.
- . "Microscopic and Molecular Biology of Human Compact Bone: An Anthropological Perspective." *Yearbook of Physical Anthropology*, volume 19 (1976).
- Ortner, Donald J., and Robert S. Corruccini. "The Skeletal Biology of the Virginia Indians." *American Journal of Physical Anthropology*, volume 45, number 3 (1976), pages 717–722.
- Ortner, Donald J., David W. von Endt, and M. S. Robinson. "The Effect of Temperature on Protein Decay in Bone: Its Significance in Nitrogen Dating of Archeological Material." In *Experimental Archeology*. New York: Columbia University Press (1977).
- Riesenberg, Saul H. "The Organization of Navigational Knowledge on Puluwat." In *Pacific Navigation and Voyaging*, by The Polynesian Society Incorporated, pages 91–128. Wellington, New Zealand, 1976.
- Rose, Carolyn L. "Comments on the Exchange of Information on Conservation Methods and Practices Between Conservators and Archeologists." In *Pacific Northwest Wet Site Wood Conservation Conference*, volume 2 (1977), pages 83–87.
- . "The Training of Conservation Specialists Within a Museum Studies Program." In *American Institute for Conservation Conference*, Boston, Massachusetts, 1977.
- Rye, Owen S., and Clifford Evans. "Traditional Pottery Techniques of Pakistan: Field and Laboratory Studies." *Smithsonian Contributions to Anthropology*, number 21, 1976.
- St. Hoyme, L. E., and Richard T. Koritzer. "Ecology of Dental Disease." *American Journal of Physical Anthropology*, volume 45, number 3 (1976), pages 673–686.
- Stewart, T. Dale. "Are Supra-Inion Depressions Evidence of Prophylactic Trephination?" *Bulletin of the History of Medicine*, volume 50 (1976), pages 414–434.

- . "Adolpho Hans Schultz (1891–1976)." *Yearbook of the American Philosophical Society*, 1976, pages 118–122.
- . "The Neanderthal Skeletal Remains from Shanidar Cave, Iraq: A Summary of Findings to Date. In *Proceedings of the American Philosophical Society*, volume 121 (1977), pages 121–165.
- Sturtevant, William C. "Perfect Likenesses: Portraits for History of the Indian Tribes of North America (1837–44)." [Exhibition Catalogue] Washington, D.C.: National Museum of History and Technology, 1977.
- . [Review] "Sacred Circles: Two Thousand Years of North American Indian Art." [Exhibition] *Council for Museum Anthropology Newsletter*, volume 1, number 2 (1977), pages 18–20.
- . [Review] *The Invasion of America*, by R. Jennings. *William and Mary Quarterly*, volume 34, number 2 (1977), pages 312–314.
- Ubelaker, Douglas H. "Analysis of the Human Skeletal Remains from the Rosenkrans Site, Sussex County, New Jersey." In *The Rosenkrans Site. An Adena-Related Mortuary Complex in the Upper Delaware Valley, New Jersey*. [Appendix II] *Archaeology of Eastern North America*, volume 4 (1976), pages 45–50.
- . "Prehistoric New World Population Size: Historical Review and Current Appraisal of North American Estimates." *American Journal of Physical Anthropology*, volume 45, number 3 (1976), pages 661–666.
- . "The Sources and Methodology for Mooney's Estimates of North American Indian Populations." In *The Native Population of the Americas in 1492*, edited by William M. Denovan, pages 243–288. Madison, Wisconsin: The University of Wisconsin Press, 1976.
- Ubelaker, Douglas H., and Marianne Bouvier. "A Comparison of Two Methods for the Microscopic Determination of Age at Death." *American Journal of Physical Anthropology*, volume 46, number 3 (1977), pages 391–394.
- Ubelaker, Douglas H., and Virginia L. Merchant. "Skeletal Growth of the Protohistoric Arikara." *American Journal of Physical Anthropology*, volume 46, number 1 (1977), pages 61–72.
- Ubelaker, Douglas H., and P. Willey, "Notched Teeth from the Texas Panhandle." *Journal of the Washington Academy of Sciences*, volume 66, number 4 (1976), pages 239–246.
- . "Human Skeletal Remains from Cramer Park, St. Croix." *Bulletin 26*, Office of the Territorial Archaeologist, Government of the Virgin Islands of the United States (1977), pages 1–2.
- . "Human Skeletal Remains from Botany Bay, St. Thomas." *Bulletin 29*, Office of the Territorial Archaeologist, Government of the Virgin Islands of the United States (1977), pages 1–3.
- Viola, Herman J. *The Indian Legacy of Charles Bird King*. Washington, D.C.: Smithsonian Institution Press, 1976.
- . "How Did an Indian Chief Really Look?" *Smithsonian*, June 1977, pages 100–104.
- Wedel, Waldo R. "The Education of a Plains Archeologist." *The Plains Anthropologist*, volume 22, number 75 (1977), pages 1–11.
- . "Native Astronomy and the Plains Caddoans." In *Native American Astronomy*, edited by Anthony F. Aveni, pages 131–145. Austin: University of Texas Press, 1977.
- . "An Introduction to Pawnee Archeology." [Reprint] *Bureau of American Ethnology Bulletin 112*, Smithsonian Institution, 1936 by J & L Reprint Company, Lincoln, Nebraska, 1977.
- Wedel, Waldo R., and Mildred M. Wedel. "Wichita Archeology and Ethnohistory." In *Kansas and the West: Bicentennial Essays in Honor of Nyle H. Miller*, pages 8–20. Topeka: Kansas State Historical Society, 1976.

Department of Botany

- Ayensu, Edward S. "Alternatives for Biological Resources in Africa." *Journal of the Washington Academy of Sciences*, volume 66, number 4 (1976), pages 197-205.
- . "Scanning Electron Microscopy of Epidermal Features in *Erithryna* (Fabaceae)." *Lloydia*, volume 40 (September-October 1977).
- . "Understanding Life." In *The Smithsonian Experience*, edited by James K. Page, Jr., Russell Bourne, and Alexis Doster III, pages 120-127. Washington, D.C.: Smithsonian Institution, 1977.
- Bohlmann, F., C. Zdero, R. M. King, and H. Robinson. "A New Ageratone Derivative from *Isocarpha oppositifolia*." *Phytochemistry*, volume 16 (1977), page 768.
- Cowan, Richard S. "A Taxonomic Revision of Elizabetha (Leguminosae-Caesalinoideae)." *Proceedings of the Koninklijke Nederlandse Akademie van Wetenschappen of Amsterdam*, series C, volume 79, number 4 (1976), pages 323-346.
- . "Studies of Tropical American Leguminosae—VIII." In *Proceedings of the Biological Society of Washington*, volume 90, number 2 (1977), pages 237-242.
- Cuatrecasas, J. "Moraceae." In *La Vegetación de la Cima del Macizo de Jaua*, by Julian A. Steyermark and C. Brewer-Carías, pages 321-323. *Boletín de la Sociedad Venezolana de Ciencias Naturales*, volume 22, numbers 132-133, March 1976.
- . "A New Subtribe in the Heliantheae (Compositae): Espeletiinae." *Phytologia*, volume 35, number 1 (1976), pages 43-61.
- . "Westoniella, a New Genus of the Astereae from the Costa Rican paramos." *Phytologia*, volume 35, number 6 (1977), pages 471-487.
- DeFilipps, R. A. "Adumbratio Florae Aethiopiae. 28 Olacaceae." *Webbia*, volume 30 (1976), pages 177-190.
- . "Hypochoeris." *Flora Europaea*, volume 4 (1976), pages 308-310.
- Erwin, Terry L., and Kjell B. Sandved. "Chirp and Rattle, Dart and Glitter." *Smithsonian*, November 1976, pages 116-120.
- Eyde, Richard H. "Durian Theory," [Review]. *Seeds of Dicotyledons*, by E. J. H. Corner. *Systematic Botany*, volume 1 (1976), pages 195-196.
- Farr, David F., and Ellen R. Farr. "Notes on *Phaeocollybia* and *Pholiota* in the Southern Appalachians." In *Distributional History of the Biota of the Southern Appalachians, Part IV, Algae and Fungi*, edited by Bruce C. Parker and Martha K. Roane, pages 296-306. Charlottesville, Virginia: The University of Virginia Press, 1976.
- Farr, Ellen R., Orson K. Miller, Jr., and David F. Farr. "Biosystematic Studies in the Genus *Pholiota*, Stirps *Adiposa*." *Canadian Journal of Botany*, volume 55 (1977), pages 1167-1180.
- Fosberg, F. R. "Distributional Extensions of Marine Spermatophytes." *Micronesica*, volume 12 (1976), pages 317-318.
- . "Expert on Hawaiian Plants Responds." *National Parks and Conservation Magazine*, volume 51 (1977), pages 28-29.
- . "Miscellaneous Notes on the Flora of Aldabra and Neighbouring Islands: IV. A New *Bulbostylis* and Observations on *Cyperus* (Cyperaceae)." *Kew Bulletin*, volume 31 (1977), pages 829-835.
- . "Miscellaneous Notes on the Flora of Aldabra and Neighbouring Islands: V. *Pandanus Tectorius* Parkinson, *Sensu Latissimo* (Pandanaeae)." *Kew Bulletin*, volume 31 (1977), pages 837-840.
- . "Paspalum *Distichum* Again." *Taxon*, volume 26 (1977), pages 201-202.
- Fosberg, F. Raymond, and Marie-Hélène Sachet. "Flora of Micronesia, 3: Convolvulaceae." *Smithsonian Contributions to Botany*, volume 36, 1977.

- Fosberg, F. Raymond, Margie V. C. Falanruw, and Marie-Hélène Satchet. "Additional Records of Vascular Plants from the Northern Mariana Islands." *Micronesica*, volume 13 (1977), pages 27-31.
- Fosberg, F. R., David R. Stoddart, and Marie-Hélène Satchet. "Island News and Comment." *Atoll Research Bulletin*, number 219, 1977.
- Hale, Mason E., Jr. "A Monograph of the Lichen Genus *Pseudoparmelia* Lyngé (Parmeliaceae)." *Smithsonian Contribution to Botany*, number 31, 1976.
- . "A Monograph of the Lichen Genus *Bulbothrix* Hale (Parmeliaceae)." *Smithsonian Contributions to Botany*, number 32, 1976.
- . "A Monograph of the Lichen Genus *Permelina* Hale (Parmeliaceae)." *Smithsonian Contributions to Botany*, number 33, 1976.
- . "New Species in the Lichen Genus *Parmotrema* Mass." *Mycotaxon*, volume 5 (1977), pages 432-448.
- King, R. M., and H. Robinson. "Studies in the Eupatoriaceae (Asteraceae). CLIX. Additions to the Genus, *Ayapana*." *Phytologia*, volume 34 (1976), pages 57-66.
- . "Studies in the Eupatoriaceae (Asteraceae). CLX. A New Species of *Scidocephala* from Ecuador." *Phytologia*, volume 34 (1976), pages 375-377.
- . "Studies in the Eupatoriaceae (Asteraceae). CLXI. A New Species of *Stevia* from Costa Rica." *Phytologia*, volume 35 (1977), pages 229-232.
- . "Studies in the Eupatoriaceae (Asteraceae). CLXII. New Species and Combinations from Venezuela." *Phytologia*, volume 35 (1977), pages 497-504.
- . "Studies in the Eupatoriaceae (Asteraceae). CLXIII. Additions to the Genus *Fleischmanniopsis*." *Phytologia*, volume 36 (1977), pages 193-200.
- King, R. M., D. W. Kyhos, A. M. Powell, P. H. Raven, and H. Robinson. "Chromosome Numbers in Compositae. XIII. Eupatoriaceae." *Annals of the Missouri Botanical Garden*, volume 63 (1976), pages 862-888.
- Kirkbride, Joseph H., Jr. "Confirmation of Hybridization between *Declieuxia fruticosa* and *D. passerina* (Rubiaceae)." *Brittonia*, volume 28, number 3 (1976), pages 341-347.
- . "A Revision of the Genus *Declieuxia* (Rubiaceae)." *Memoirs of the New York Botanical Garden*, volume 28, number 4 (1976), pages 1-87.
- . "Index to the Rubiaceae by Julian A. Steyermark in the *Botany of the Guayana Highland* by B. Maguire and Collaborators." *Phytologia*, volume 36 (1977), pages 324-366.
- Lellinger, David B. "Nomenclatural Notes on Some Ferns of Costa Rica, Panama, and Colombia." *American Fern Journal*, volume 67, number 2 (1977), pages 58-60.
- Lellinger, David B. "Nomenclatural and Taxonomic Notes on the Pteridophytes of Costa Rica, Panama, and Columbia, I." In *Proceedings of the Biological Society of Washington*, volume 89, number 61, pages 703-732. 1977.
- . "Pteridophyta." In *La Vegetación de la Cima del Macizo de Jaua*, by Julian A. Steyermark and C. Brewer-Carías, pages 262-270. *Boletín de la Sociedad Venezolana de Ciencias Naturales*, volume 22, number 132-133 (1976).
- Little, Elbert L., Jr. "Rare Tropical Trees of South Florida." *Conservation Research Report*, 20. Washington, D.C.: U.S. Forest Service, 1976.
- Little, Elbert L., Jr., and Barbara H. Honkala. "Trees and Shrubs of the U.S.: A Bibliography for Identification." *Miscellaneous Publications*, 1336. Washington, D.C.: U.S. Department of Agriculture, 1976.
- Little, Elbert L., Jr., and Roy O. Woodbury. "Trees of the Caribbean National Forest, Puerto Rico." *Forest Service Research Paper*, ITF-20. Washington, D.C.: U.S. Forest Service, 1976.
- Moldenke, H. N., and L. B. Smith. "Eriocauláceas." In *Flora Ilustrada Catarinense*, part 1, fascicle ERIO (1976), pages 1-103.

- Nicolson, Dan H. "Proposal to Change the Typification of 723 *Amorphophallus* Nom Cons. (Araceae)." *Taxon*, volume 26 (May 1977), pages 337-338.
- Nicolson, Dan H., and Joseph Bogner. "Proposal for the Conservation of 787 *Pinellia* Tenore (1839) against *Atherurus* Blum (1837) (Araceae)." *Taxon*, volume 26 (May 1977), page 338-339.
- Nicolson, Dan H., and George C. Steyskal. "The Masculine Garden of the Generic Name *Styrax* Linnaeus (Styraceae)." *Taxon*, volume 25 (1976), pages 581-587.
- Norman, E. M., and L. B. Smith. "Buddleia in Loganiáceas." In *Flora Illustrada Catarinense*, part 1, fascicle LOGA (1976), pages 1-38.
- . "Strychnos in Loganiáceas." In *Flora Illustrada Catarinense*, part 1, fascicle LOGA (1976), pages 64-73.
- Norris, James N. "[The Green Algal Genus] *Blidingia* Kylin 1947." In *Marine Algae of California*, by Isabella A. Abbott and George J. Hollenberg, pages 70-73. Stanford, California: Stanford University Press, 1976.
- . "[The Green Algal Genus] *Enteromorpha* Link 1820." In *Marine Algae of California*, by Isabella A. Abbott and George J. Hollenberg, pages 73-77. Stanford, California: Stanford University Press, 1976.
- Norris, James N., and Katina E. Bucher. "The Genus *Platoma* (Gigartinales, Rhodophyta), with a Description of *P. abbottiana* sp. nov." *Journal of Phycology*, volume 13, number 2 (1977), pages 155-162.
- Nowicke, Joan W., and John J. Skvarla. "Pollen Morphology and the Relationship of the Plumbaginaceae, Polygonaceae, and Primulaceae to the Order Centrospermae." *Smithsonian Contributions to Botany*, number 37, 1977.
- Read, Robert W. "Preface" and "*Palmarum Colombiensium Elenchus* por Armando Dugand (posthumous)." [Also edited and updated for publication.] *Cespedesia*, volume 5, numbers 19 and 20 (April 1977), pages 257-336.
- Robinson, H. "Dolichopodidae." In *Biota Acuática de Sudamérica Austral*, edited by S. H. Hurlbert, pages 305-306. San Diego, California: S. H. Hurlbert, 1977.
- . "A New Species of *Dominicomyyia* from Brasil (Diptera: Dolichopodidae)." In *Proceedings of the Entomological Society of Washington*, volume 79, pages 310-312. 1977.
- . "A New Species of *Taxilejeunea* from Venezuela." *Phytologia*, volume 34 (1976), pages 67-68.
- . "A New Species of *Vernonia* from Ecuador." *Phytologia*, volume 34 (1976), pages 301-304.
- . "Studies in the Heliantheae (Asteraceae). VII. Notes on the Genus, *Monactis*." *Phytologia*, volume 34 (1976), pages 33-45.
- . "Studies in the Liabeae (Asteraceae). III. Notes on the Genus, *Cacosmia*." *Phytologia*, volume 34 (1976), pages 46-52.
- . "Studies in the Liabeae (Asteraceae). IV. Additions to the Genus, *Philoglossa*." *Phytologia*, volume 34 (1976), pages 53-56.
- . "Studies in the Liabeae (Asteraceae). New Andean Species of *Liabum*." *Phytologia*, volume 34 (1976), pages 285-300.
- . "Studies in the Liabeae (Asteraceae). VI. Notes on the Genus *Erato*." *Phytologia*, volume 34 (1976), pages 378-379.
- . "Studies in the Liabeae (Asteraceae). VII. Additions to the Genus *Munnozia*." *Phytologia*, volume 34 (1976), pages 380-387.
- . "Studies in the Liabeae (Asteraceae). VIII. Additions to *Liabum* and *Munnozia*." *Phytologia*, volume 35 (1976), pages 37-42.
- . "Studies in the Liabeae (Asteraceae). IX. Additions to *Munnozia* and *Oligactis*." *Phytologia*, volume 35 (1977), pages 199-204.

- . "Studies in the Liabeae (Asteraceae). X. Additions to the Genus *Paranephelium*." *Phytologia*, volume 35 (1977), pages 233–240.
- . "Studies in the Liabeae (Asteraceae). XI. New Species in the Kew Herbarium." *Phytologia*, volume 35 (1977), pages 488–496.
- . "Studies in the Heliantheae (Asteraceae). VIII. Notes on Genus and Species Limits in the Genus *Viguiera*." *Phytologia*, volume 36 (1977), pages 201–215.
- Robinson, H., and J. Cuatrecasas. "Notes on the Genus and Species Limits of *Pseudogynoxys* (Greenm.) Cabrera (Senecioneae, Asteraceae)." *Phytologia*, volume 36 (1977), pages 177–192.
- Sachet, M.-H. "Végétation et Flore Terrestre, Atoll de Takapoto." In *Programme MAB de l'UNESCO, thème VII sur les îles*, by B. Salvat, page 73. Papeete: MAB Programme de l'UNESCO, 1977.
- Saldanha, C. J., and Dan H. Nicolson. *Flora of Hassan District, Karnataka, India*. New Delhi: Amerind Publishing Company, 1976.
- Shetler, Stanwyn G. "Start with Christmas Tree If It's Still Around." *Audubon Naturalist News*, volume 3, number 1 (January 1977), page 7.
- . "Phenology Project: Dates of Spring Flowering." *Field Project*, Number 1 (1977), pages i-ii and 1-10. Concord, Massachusetts: International Environmental Resources Network.
- Simpson, Beryl B. "Breeding Systems of Dominant Perennial Plants of Two Disjunct Warm Desert Ecosystems." *Oecologia*, volume 27 (1977), pages 203–226.
- , editor and contributor. *Mesquite: Its Biology in Two Desert Scrub Ecosystems*. Stroudsburg, Pennsylvania: Dowden, Hutchinson and Ross, Inc., 1977.
- Simpson, Beryl B., J. L. Neff, and D. Seigler. "Krameria, Free Fatty Acids and Oil-Collecting Bees." *Nature*, volume 267 (1977), pages 150–151.
- Smith, Lyman B. "Xyridaceae," pages 275 and 278; "Bromeliaceae," pages 286–290, 293–294, and 307–311. In *La Vegetación de la Cima del Macizo de Jaua*, by Julian Steyermark and C. Brewer-Carías. *Boletín de la Sociedad Venezolana de Ciencias Naturales*, volume 22, numbers 132–133 (March 1976).
- Soderstrom, Thomas R. "The Graceful Grasses." *Garden* (March/April 1977), pages 5-9.
- Soderstrom, Thomas R., and C. E. Calderón. "Curtains for this Bamboo? The Mysterious Flowering of Ma-dake." *Pacific Horticulture*, volume 37, number 3 (1976), pages 7–14.
- Solbig, O. T., and Beryl B. Simpson. A "Garden Experiment on Competition between Biotypes of the Common Dandelion (*Taraxacum officinale*)."
Journal of Ecology, volume 65 (1977), pages 427–430.
- Stafleu, Frans A., and Richard S. Cowan. *Taxonomic Literature: A Selective Guide to Botanical Publications and Collections with Dates, Commentaries and Types*, second edition. Utrecht: Bohn, Scheltema Holkema, 1976.
- Stern, William L. "Multiple Uses of Institutional Wood Collections." *Curator*, volume 19 (1976), pages 265–270.
- Steyermark, Julian A., and Joseph H. Kirkbride, Jr. "Review of the Genus *Perama* (Rubiaceae)." *Brittonia*, volume 29, number 2 (June 1977), pages 191–198.
- Tippo, Oswald, and William L. Stern. *Humanistic Botany*. New York: W. W. Norton and Company, 1977.
- Troth, R. G., and Dan H. Nicolson. "Artificial Key to the Common Shrubs of the Riverine Forests, Royal Chitwan National Park, Nepal." *Phytologia*, volume 35 (February 1977), pages 224–228.
- Wasshausen, Dieter C. "New Species of Acanthaceae from Colombia." *Phytologia*, volume 37 (September 1977), pages 213–218.

- . "New Taxa of Acanthaceae from the Rio Palenque Science Center." *Selbyana*, volume 2, number 1 (August 1977), pages 14–21.
- Wurdack, John J. "Certamen Melastomataceis XXV." *Phytologia*, volume 35, number 1 (October 1976), pages 1–13.
- . "Certamen Melastomataceis XXVI." *Phytologia*, volume 35, number 3 (February 1977), pages 241–251.
- . "Melastomataceae." In *La Vegetación de la Cima del Macizo Jaua*, by Julian A. Steyermark and C. Brewer-Carías, pages 366–370. *Boletín de la Sociedad Venezolana de Ciencias Naturales*, volume 22, numbers 132–133 (March 1976).

Department of Entomology

- Abercrombie, J. "Medical Entomology Studies—IX. The Subgenus *Christophersiomyia* of the Genus *Aedes* (Diptera: Culicidae)." *Contributions of the American Entomological Institute*, volume 14, number 2 (1977), 72 pages.
- Blake, D. H. "*Colapsis favosa* Say and Its Close Relatives (Coleoptera: Chrysomelidae)." In *Proceedings of the Entomological Society of Washington*, volume 79, number 2, pages 209–215. 1977.
- . "*Colaspis chrysis* Oliver and Its Close Relatives (Coleoptera: Chrysomelidae). In *Proceedings of the Entomological Society of Washington*, volume 79, number 3, pages 417–421. 1977.
- Burger, J. F. "The Biosystematics of Immature Arizona Tabanidae (Diptera)." In *Transactions of the American Entomological Society*, number 103. 1977.
- Burns, John M. ["Arthropoda"] (untitled poem). Printed on a wall of the Insect Zoo, National Museum of Natural History, August 1976, and in "Chirp and Rattle, Dart and Glitter!" by T. L. Erwin and K. Sandved. *Smithsonian*, volume 7, number 8 (1976), pages 116–120.
- Cartwright, Oscar L. "Adult Feeding by *Dynastes tityus* (Linn.) Coleoptera: Scarabaeidae." *The Coleopterists Bulletin*, volume 30, number 4 (1976), pages 336–337.
- . "A New *Megasoma* from Baja California, Mexico (Coleoptera: Scarabaeidae: Dynastinae)." *The Coleopterists Bulletin*, volume 30, number 1 (1976), pages 85–90.
- Clarke, J. F. Gates. "Microlepidoptera. Tortricoidea." *Insects of Micronesia*, volume 9, number 1 (1976), pages 1–144.
- Crabill, R. E., Jr. "A New Cryptopid Genus, with Key to the Genera Known to Occur in North America Including Mexico. (Chilopoda: Scolopendromorpha: Cryptopidae). In *Proceedings of the Entomological Society of Washington*, volume 79, number 3, pages 346–349. 1977.
- de Meillon, Botha. "The Changing Pattern in Transmission of Bancroftian Filariasis." In *Proceedings of the Fifteenth International Congress of Entomology*, pages 498–504. 1976.
- de Meillon, Botha, and Gideon van Eeden. "*Anopheles (Cellia) deaconi* n. sp. from South Africa (Diptera: Culicidae)." *Mosquito Systematics*, volume 8, number 4 (1976), pages 335–342.
- Emerson, K. C., and Roger D. Price. "Mallophaga of Venezuelan Mammals." In *Brigham Young University Science Bulletin, Biological Series*, volume 20, number 3, pages 1–77. 1975.
- . "Abrocomophagidae (Mallophaga: Amblycera), a New Family from Chile." *The Florida Entomologist*, volume 59 (February 1977), pages 425–428.
- Erwin, Terry L. "Chirp and Rattle, Dart and Glitter!" *Smithsonian*, volume 7, number 8 (November 1976), pages 116–120.

- . "Studies of the Subtribe Tachyina (Coleoptera: Carabidae: Bembiidiini) Supplement B: Lectotype Designations of *Masoreus ridiculus* Schaufuss and Transfer of This Species to *Polyderis*." *The Coleopterists Bulletin*, volume 31, number 1 (1977), page 90.
- Erwin, Terry L., and La Verne J. M. Erwin. "Relationships of Predaceous Beetles to Tropical Forest Wood Decay. Part II. The Natural History of Neotropical *Eurycoleus macularis* Chevrolat (Carabidae: Lebiini) and Its Implications in the Evolution of Ectoparasitoidism." *Biotropica*, volume 8, number 4 (December 1976), pages 215–224.
- Erwin, Terry L., Donald R. Whitehead, and George E. Ball. "Family 4. CARABIDAE, The Ground Beetles. North American Beetle Fauna Project." *The Biological Research Institute of America, Inc.*, July 1977, pages 4.1–4.68.
- Field, William D., and José Herrera. "The Pierid Butterflies of the Genera *Hypsochila* Ureta, *Phulia* Herrich-Schäffer, *Infraphulia* Field, *Pierphulia* Field, and *Piercolias* Steudinger." *Smithsonian Contributions to Zoology*, number 232, 1977.
- Flint, Oliver S., Jr. [Review] *The Odonata of Canada and Alaska, volume III*, by Edmund M. Walker and Philip S. Corbet. *Bulletin of the Entomological Society of America*, volume 22 (1976), pages 392–393.
- . "Neuroptera, Mecoptera and Trichoptera." In *Aquatic Biota of Southern South America*, edited by Stuart H. Hurlbert, pages 187–188, 248, and 249–253. San Diego: San Diego State University, 1977.
- . [Review] *Marine Insects*, edited by Lanna Cheng. *Bulletin of the Entomological Society of America*, volume 23 (1977), pages 152–153.
- Flint, Oliver S., Jr., and Joaquin Bueno-Soria. "Studies of Neotropical Caddisflies, XXI. The Genus *Lepidostoma* (Trichoptera: Lepidostomatidae)." In *Proceedings of the Biological Society of Washington*, volume 90, pages 375–387. 1977.
- Flint, Oliver S., Jr., and Scott J. Herrmann. "The Description of and Environmental Characterization for, a New Species of *Ochrotrichia* from Colorado (Trichoptera: Hydroptilidae)." In *Annals of the Entomological Society of America*, volume 69, pages 894–898. 1976.
- Ford (Smith), T. L. "Autobiographical Vignette." *Mosquito Systematics*, volume 9, number 1 (1977), pages 88–90.
- Froeschner, Richard C. "Description of a New Species of Lace Bug Attacking the Oil Palm in Colombia (Hemiptera: Tingidae)." In *Proceedings of the Entomological Society of Washington*, volume 78, number 1, pages 104–107. 1976.
- . "Galapagos Lace Bugs: Zoogeographic Notes and a New Species of *Phatnoma* (Hemiptera: Tingidae)." In *Proceedings of the Entomological Society of Washington*, volume 78, number 2, pages 181–184. 1976.
- . "Zoogeographic Notes of the Lace Bug Genus *Acalypta* Westwood in the Americas with Description of a New Species from Mexico (Hemiptera: Tingidae)." *American Midland Naturalist*, volume 96, number 2 (1976), pages 257–269.
- . "The Burrowing Bugs of Hawaii, with Description of a New Species (Hemiptera: Cydnidae)." In *Proceedings of the Hawaiian Entomological Society*, volume 22, number 2, pages 229–236. 1977.
- Gordon, Robert D., and O. L. Cartwright. "Four New Species of *Aegialia* (S. str.) (Coleoptera: Scarabaeidae) from California and Nevada Sand Dunes." *Journal of the Washington Academy of Sciences*, volume 67, number 1 (1977), pages 42–48.
- Harbach, R. E., and K. L. Knight. "A Mosquito Taxonomic Glossary X. The Larval Mandible." *Mosquito Systematics*, volume 9, number 1 (1977), pages 25–57.
- . "A Mosquito Taxonomic Glossary XI. The Larval Maxilla." *Mosquito Systematics*, volume 9, number 1 (1977), pages 128–175.

- Huang, Yiau-Min. "Medical Entomology Studies—VII. The Subgenus *Stegomyia* of *Aedes* in Southeast Asia. II—The *edwardsi* Group of Species. III—The *w.-albus* Group of Species (Diptera: Culicidae)." In *Contributions of the American Entomological Institute*, volume 14, number 1, 1977.
- Hurd, Paul D., Jr. [Review] *Evolution of Instinct: Comparative Ethnology of Hymenoptera*, by Kunio Iwata. *Bulletin of the Entomological Society of America*, volume 23 (1976), page 103.
- Krombein, Karl V. "Lectotype Designations for Three New World *Liris* with Taxonomic Notes (Hymenoptera: Larridae)." In *Proceedings of the Entomological Society of Washington*, volume 78, pages 333–335. 1976.
- , editor and principal investigator for SF 3-00104: Alfieri, Anastase. "The Coleoptera of Egypt." *Memoires de la Société Entomologique d'Égypte*, volume 5 (1977), 361 pages.
- Krombein, Karl V., and Howard E. Evans. "Three New Neotropical *Pterombrus* with Description of the Diapausing Larva (hymenoptera: Tiphidae)." In *Proceedings of the Entomological Society of Washington*, volume 78, pages 361–368. 1976.
- Mathis, Wayne N., and Willis W. Wirth. "A New Neotropical Shore Fly Genus with Two New Species (Diptera: Ephydriidae)." *The Pan-Pacific Entomologist*, volume 52, number 2 (1976), pages 126–132.
- . "A New Genus of Psilopine Flies (Diptera: Ephydriidae) with Notes on Its Relationships." In *Proceedings of the Entomological Society of Washington*, volume 79, number 1, pages 63–74. 1977.
- Peyton, E. L. "Medical Entomology Studies—X. A Revision of the Subgenus *Pseudoficalbia* of the Genus *Uranotaenia* in Southeast Asia (Diptera: Culicidae)." In *Contributions of the American Entomological Institute*, volume 14, number 3, 273 pages. 1977.
- Price, Roger D., and K. C. Emerson. "Three New Genera and Species of Menoponidae (Mallophaga) from Southeast Asia and New Guinea." *Pacific Insects*, volume 16 (1975), pages 427–432.
- . "The *Menacanthus* (Mallophaga: Menoponidae) of the Piciformes (Aves)." In *Annals of the Entomological Society of America*, volume 68, pages 779–785. 1975.
- Reinert, J. F. "A New Man-Biting Species of *Aedes* (*Paraedes*) from Southeast Asia (Diptera: Culicidae)." *Mosquito Systematics*, volume 8, number 3 (1976), pages 319–331.
- . "Medical Entomology Studies—V. The Subgenus *Rhinoskusea* of the Genus *Aedes* (Diptera: Culicidae)." In *Contributions of the American Entomological Institute*, volume 13, number 2, 1976.
- Sirivanakarn, S. "Medical Entomology Studies—III. A Revision of the Subgenus *Culex* in the Oriental Region. (Diptera: Culicidae). In *Contributions of the American Entomological Institute*, volume 12, number 2, 1976.
- . "Additional Descriptions of Three Species of *Culex* (*Eumelanomyia*) with the Description of a New Species from Peninsular Malaysia (Diptera: Culiciae)." *Mosquito Systematics*, volume 9, number 2 (1977), pages 73–87.
- . "Redescription of Four Oriental Species of *Culex* (*Culiciomyia*) and the Description of a New Species from Thailand (Diptera: Culicidae)." *Mosquito Systematics*, volume 9, number 2 (1977), pages 93–111.
- . "Medical Entomology Studies—VI. A Revision of Subgenus *Lophoceraomyia* of the Genus *Culex* in the Oriental Region (Diptera: Culicidae)." In *Contributions of the American Entomological Institute*, volume 13, number 4, 1977.
- Sirivanakarn, S., and S. Ramalingam. "A New Species of *Culex* (*Eumelanomyia*) Theobald with Notes on Three Other Species from Malaysia (Diptera: Culicidae)." *Mosquito Systematics*, volume 8, number 2 (1976), pages 209–216.

- Spangler, Paul J. "Three New Ecuadorian Species of the Aquatic Beetle Genus *Chaetarthria* (Coleoptera: Hydrophilidae)." In *Proceedings of the Biological Society of Washington*, volume 90, number 3, pages 566-578. 1977.
- Spangler, Paul J., and Glen Longley. "The Larva of a New Subterranean Water Beetle, *Haideoporus texanus* (Coleoptera: Dytiscidae: Hydroporinae)." In *Proceedings of the Biological Society of Washington*, volume 90, number 3, pages 532-535. 1977.
- Spangler, Paul J., and Philip D. Perkins. "Three New Species of the Neotropical Water Beetle Genus *Elmoparnus* (Coleoptera: Dryopidae)." In *Proceedings of the Biological Society of Washington*, volume 89, number 63, pages 743-760. 1977.
- Traub, R. "*Tiflovia*, a New Genus of Pygiopsyllid Flea from New Guinea, with Notes of Convergent Evolution and Zoogeography (Siphonaptera)." *Journal of Medical Entomology*, volume 13, number 6 (1977), pages 653-685.
- Traub, R., C. L. Wisseman, Jr., and A. Farhang-Azad. [Abstract] "The Ecology of Chigger-borne Rickettsiosis and Murine Typhus—Changing Concepts and Epidemiology." In *Proceedings of the Fifteenth International Congress of Entomology*, volume 11, number 3, pages 487-489. 1974.
- Ward, R. A. "Recent Changes in the Epidemiology of Malaria Relating to Human Ecology." In *Proceedings of the Fifteenth International Congress of Entomology*, pages 523-539. 1976
- . "Culicidae." In *Biota Acuática de Sudamérica Austral*. (Spanish with English translation), edited by S. H. Hurlbert, pages 268-274. San Diego: San Diego State University, 1977.
- Ward, R. A., B. Jordan, A. R. Gillogly, and F. J. Harrison. "*Anopheles litoralis* King and *A. barbirostris* Group on the Island of Guam." *Mosquito News*, volume 36, number 1 (1976), pages 99-100.

Department of Invertebrate Zoology

- Barnard, J. L. "Amphipoda (Crustacea) from the Indo-Pacific Tropics: A Review." *Micronesica*, volume 12 (1976), pages 169-181.
- . "Affinities of *Paraniphargus lelouparum* Monod, A Blind Anchialine Amphipod (Crustacea) from the Galapagos Islands." In *Proceedings of the Biological Society of Washington*, volume 89, pages 421-432. 1976.
- Barnard, J. L., and Eric Schulenberger. "Clarification of the Abyssal Amphipod, *Paralicella tenuipes* Chevreus." *Crustaceana*, volume 31 (1976), pages 267-274.
- Barnes, A. T., L. B. Quetin, J. J. Childress, and D. L. Pawson. "Deep-sea Macroplanktonic Sea Cucumbers; Suspended Sediment Feeders Captured from Deep Submergence Vehicle." *Science*, volume 194 (1976), pages 1083-1085.
- Bayer, Frederick M., and Katherine Margaret Muzik. "New Genera and Species of the Holaxonian Family Chrysogorgiidae (Octocorallia: Gorgonacea)." *Zoologische Mededelingen*, volume 50, number 5 (1976), pages 65-90. 1976.
- . "A New Solitary Octocoral, *Taiaroa tauhou* gen. et sp. nov. (Coelenterata: Protoalcyonaria) from New Zealand." *Journal of the Royal Society of New Zealand*, volume 6, number 4 (1976), pages 499-515.
- Billups, L. H., and J. C. Harshbarger. "Reptiles." [Section of the chapter, "Naturally Occurring Neoplastic Diseases."] In *CRC Handbook of Laboratory Animal Science*, volume 3, edited by E. C. Melby, Jr., and N. H. Altman, pages 343-356. Cleveland: CRC Press, 1976.
- Bouchard, Raymond W., and Horton H. Hobbs, Jr. "A New Subgenus and

- Two New Species of Crayfishes of the Genus *Cambarus* (Decapoda: Cambaridae) from the Southeastern United States." *Smithsonian Contributions to Zoology*, volume 224, 1976.
- Bowman, T. E. "*Stygiomysis major*, A New Troglobitic Mysid from Jamaica, and Extension of the Range of *S. holthuisi* to Puerto Rico (Crustacea: Mysidacea: Stygiomysidae)." *International Journal of Speleology*, volume 8 (1976), pages 365-373.
- . "Isopod Crustaceans (except Anthuridae) Collected on the Presidential Cruise of 1938." In *Proceedings of the Biological Society of Washington*, volume 89, number 57, pages 653-666. 1977.
- . "*Dendrosomides lucicutiae*, A New Species of Suctorian from the Pelagic Calanoid Copepod, *Lucicutia*." *Ibid*, volume 89, number 60, pages 692-702. 1977.
- . "Mysidacea." In *Biota Acuática de Sudamérica Austral*, edited by S. H. Hurlbert, volume 14, 342 pages. San Diego: San Diego State University, 1977.
- Chace, Fenner A., Jr., and Guy Barnish. "Swarming of A Raninid Megalopa at St. Lucia, West Indies (Decapoda: Brachyura)." *Crustaceana*, volume 31, part 1 (1976), pages 105-107.
- Child, C. Allan. "On Some Pycnogonida of French Oceania." In *Proceedings of the Biological Society of Washington*, volume 90, number 2, pages 440-446. 1977.
- . "Four New Species of *Anoplodactylus* (Pycnogonida) from the Western North Atlantic." In *Proceedings of the Biological Society of Washington*, volume 90, number 3, pages 584-596. 1977.
- Clarke, Arthur H. "The Endangered Molluscs of Canada." In *Proceedings of the Symposium on Canada's Threatened Species and Habitats*, pages 148-150. 1977.
- Cohen, Ann C. "The Systematics and Distribution of *Loligo* (Cephalopoda: Myopsida) in the Western North Atlantic, with Descriptions of Two New Species." *Malacologia*, volume 15, number 2 (1976), pages 299-367.
- Cohen, Ann C., and Dustin D. Chivers. "Types of Podocopid Ostracoda Described by Skogsberg (1928) in the Type Collection of the California Academy of Sciences, San Francisco." *The Ostracodologist*, number 24 (1976), pages 10-16. Tel Aviv, Israel.
- Cressey, R. F. "Two New Species of *Colobomatus* (Copepoda: Cyclopodia) Parasitic on Pacific Fish." In *Proceedings of the Biological Society of Washington*, volume 90, number 3, pages 579-583. 1977.
- Danta, W. D., and M. E. Rice. "A Restudy of the Middle Cambrian Bergess Shale Fossil Worm, *Ottoia Prolifica*." In *Proceedings of the International Symposium on the Biology of the Sipuncula and Echiura*, edited by M. E. Rice and M. Todorovic, volume 2, pages 79-80. 1976.
- Grigg, Richard, W., and Frederick M. Bayer. "Present Knowledge of the Systematics and Zoogeography of the Order Gorgonacea in Hawaii." *Pacific Science*, volume 30, number 2 (1976), pages 167-175.
- Harshbarger, J. C. "Description of Polyps and Epidermal Papillomas in Three Bivalve Mollusk Species." *Marine Fisheries Review*, volume 38 (1976), pages 25-29.
- Harshbarger, J. C., S. E. Shumway, and G. W. Bane. "Variably Differentiating Oral Neoplasms, Ranging from Epidermal Papilloma to Odontogenic Ameloblastoma, in Cunners [(*Tautogolabrus adspersus*) Osteichthyes; Perciformes: Labridae]." In *Progress in Aquatic Animals*, edited by C. J. Dawe, D. G. Scarpelli, and S. R. Wellings, pages 113-128. Basel: Karger, 1976.
- Harshbarger, J. C., S. V. Otto, and S. C. Chang. "Chlamydiae (with Phages), Mycoplasmas, and Rickettsiae in Chesapeake Bay Bivalves." *Science*, volume 196 (1977), pages 666-668.

- Hobbs, Horton H., Jr. "The Crayfish *Bouchardina robisoni*, A New Genus and Species (Decapoda, Cambaridae) from Southern Arkansas." In *Proceedings of the Biological Society of Washington*, volume 89, number 62, pages 733–742. 1977.
- Hobbs, Horton H., Jr., and H. H. Hobbs III. "On the Troglobitic Shrimps of the Yucatan Peninsula, Mexico (Decapoda: Atyidae and Palaemonidae)." *Smithsonian Contributions to Zoology*, volume 240, 1976.
- Hobbs, Horton H., Jr., and David S. Lee. "A New Troglobitic Crayfish (Decapoda, Cambaridae) from Peninsular Florida." In *Proceedings of the Biological Society of Washington*, volume 89, number 32, pages 382–391. 1976.
- Hobbs, Horton H., Jr., and Daniel J. Peters. "The Entocytherid Ostracods of North Carolina." *Smithsonian Contributions to Zoology*, volume 247, 1977.
- Hobbs, Horton H., Jr., and Margaret Walton. "New Entocytherid Ostracods from Kentucky and Tennessee." In *Proceedings of the Biological Society of Washington*, volume 89, number 33, pages 393–404. 1976.
- Hobbs, Horton H., Jr., H. H. Hobbs III, and Margaret A. Daniel. "A Review of the Troglobitic Decapod Crustaceans of the Americas." *Smithsonian Contributions to Zoology*, volume 244, 1977.
- Hope, W. D., B. E. Coull, R. L. Ellison, J. W. Feeger, R. P. Higgins, W. D. Hummon, R. M. Rieger, W. E. Sterrer, H Thiel, and J. H. Tietjen. "Quantitative Estimates of the Meiofauna from the Deep Sea off North Carolina, U.S.A." *Marine Biology*, volume 39 (1977), pages 233–240.
- Jones, M. L., P. A. Jumars, and D. Thistle. "Detecting Two-Dimensional Spatial Structure in Biological Data." *Oecologia*, volume 28 (1977), pages 109–123.
- . "A Redescription of *Magelona papillicornis* F. Muller." In *Essays on Polychaetous Annelids in Memory of Dr. Olga Hartman*, edited by D. J. Reish and K. Fauchald, pages 247–266. Los Angeles: Allan Hancock Foundation, 1977.
- Kornicker, L. S. "Benthic Marine Cypridinacea from Hawaii (Ostracoda)." *Smithsonian Contributions to Zoology*, volume 231. 1976.
- Kornicker, L. S., and K. G. McKenzie. "Redescription of *Eurypylus petrosus* Brady, 1869, and A Key to the Genera of Sarsiellidae (Myodocopina: ostracoda)." In *Proceedings of the Biological Society of Washington*, volume 89, pages 347–352. 1976.
- Kornicker, L. S., and I. G. Sohn. "Phylogeny, Ontogeny, and Morphology of Living and Fossil Thaumatocypreidacea (Myodocopa: Ostracoda)." *Smithsonian Contributions to Zoology*, volume 219, 1976.
- . "Evolution of the Entomoconchacea." *Abhandlungen Verhandlungen naturwissenschaftlichen Vereins Hamburg*, numbers 18/19 [Supplement] pages 55–61. 1976.
- . "Removal of Gelatinous Coating from the Surface of the Carapace of Ostracoda in Preparation for Their Examination with the Scanning Electron Microscope." In *Proceedings of the Biological Society of Washington*, volume 89, pages 365–368. 1976.
- Kornicker, L. S., and F. P. C. M. van Morkhoven. "*Metapolycope*, A New Genus of Bathyal Ostracoda from the Atlantic (Suborder Cladocopina)." *Smithsonian Contributions to Zoology*, volume 225, 1976.
- Kornicker, L. S., and F. E. Caraion. "West African Myodocopid Ostracoda (Cypridinidae, Philomedidae)." *Smithsonian Contributions to Zoology*, volume 241, 1977.
- Leibovitz, L., J. C. Harshbarger, and P. Chanley. "A Polypoid Myoma of the Foot of a Surf Clam (*Spisula solidissima*)." In *Proceedings of the First International Colloquium on Invertebrate Pathology and Ninth Annual Meeting, Society for Invertebrate Pathology*, pages 148–150. Kingston, Canada: Queen's University, 1976.

- Manning, Raymond B. "Redescriptions of *Oratosquilla indica* (Hansen) and *Clorida verrucosa* (Hansen), with Accounts of a New Genus and Two New Species." *Beaufortia*, volume 25, number 318 (1976), pages 1-13.
- . "Preliminary Accounts of Five New Genera of Stomatopod Crustaceans." In *Proceedings of the Biological Society of Washington*, volume 90, number 2, pages 420-423. 1977.
- Manning, Raymond B., and Horton H. Hobbs, Jr. "Decapoda." In *Biota Acuática de Sudamérica Austral*, edited by S. H. Hurlbert, pages 157-162. San Diego: San Diego State University, 1977.
- Manning, Raymond B., and Paul Struhsaker. "Occurrence of the Caribbean Stomatopod, *Bathysquilla microps*, off Hawaii, with Additional Records for *B. microps* and *B. crassispinosa*." In *Proceedings of the Biological Society of Washington*, volume 89, pages 439-449. 1976.
- McKinney, Larry D., and J. L. Barnard. "A New Marine Genus and Species of the *Nuuanu*-group (Crustacea, Amphipoda) from the Yucatan Peninsula." In *Proceedings of the Biological Society of Washington*, volume 90. 1977.
- Pawson, D. L. "Molpadiid Holothurians of the Southern Atlantic, Pacific and Indian Oceans." *Antarctic Research Series*, volume 26, number 4, 1976.
- . "Shallow-Water Sea Cucumbers from Carrie Bow Cay, Belize." In *Proceedings of the Biological Society of Washington*, volume 89, number 31, pages 369-382. 1976.
- . "Two New Sea Cucumbers (Echinodermata: Holthuroidea) from the Eastern United States." In *Proceedings of the Biological Society of Washington*, volume 89, number 34, pages 405-410. 1976.
- Pettibone, Marian H. "Contributions to the Polychaete Family Trochochaetidae Pettibone." *Smithsonian Contributions to Zoology*, volume 230, 1976.
- . "Revision of the Genus *Macellicephalo* McIntosh and the Subfamily Macellicephalinae Hartmann-Schroder (Polychaeta: Polynoidae)." *Smithsonian Contributions to Zoology*, volume 229, 1976.
- . "Review of *Halosydropsis* and Related Genera (Polychaeta: Polynoidae: Lepidonotinae)." In *Essays on Polychaetous Annelids in Memory of Dr. Olga Hartman*, edited by D. J. Reish and K. Fauchald, pages 39-62. Los Angeles: University of Southern California, Allan Hancock Foundation, 1977.
- . "The Synonymy and Distribution of the Estuarine *Hypaniola florida* (Hartman) from the East Coast of the United States (Polychaeta: Ampharetidae). In *Proceedings of the Biological Society of Washington*, volume 90, number 2, pages 205-208. 1977.
- Rehder, Harald A. "Mollusca." In "The Natural History of Johnston Atoll, Central Pacific Ocean," *Atoll Research Bulletin*, number 192, pages 70-73, December 1976.
- Rice, Mary E. "Larval Development and Metamorphosis in Sipuncula." *American Zoologist*, volume 16 (1976), pages 563-571.
- . "Sipunculans Associated with Coral Communities." *Micronesica*, volume 12 (1976), pages 119-132.
- Rice, M. E., and M. Todorovic, editors. *Proceedings of the International Symposium on the Biology of the Sipuncula and Echiura*, volume 2, page 204. 1976.
- Roper, Clyde F. E. "A Comparative Study of Catches of Pelagic Cephalopods by Various Midwater Trawls." In *The Biology of Cephalopods, Symposia of the Zoological Society of London*, volume 38, pages 61-87. 1977.
- Rose, F. L., and J. C. Harshbarger. "Neoplastic and Possibly Related Skin Lesions in Neotenic Tiger Salamanders from A Sewage Lagoon." *Science*, volume 196 (1977), pages 666-668.

- Rosewater, J. "Pleurocera Rafinesque, 1818 (Gastropoda): Proposed Designation of Type-Species under the Plenary Powers. Z. N. (S.)83." *Bulletin Zoological Nomenclature*, volume 33, part 2, pages 105-113. September 1976.
- . [Review] *Shell Collector's Guide*, by Ruth Fair. *National Capital Shell Club Newsletter*, pages 11-12, September 1976.
- . "Letter to the Editor [On Australian Littorinidae]." *Australian Shell News*, number 16 (October 1976), page 2.
- . "Bicentennial Notty." *National Capital Shell Club Newsletter*, page 8, February 1977.
- Rowe, F. W. E., and D. L. Pawson. "Type-Specimens of Echinoderms in the Australian Museum, Sydney." *Records of the Australian Museum*, 1977.
- Ruetzler, K. "Ecology of Tunisian Commercial Sponges." *Tethys*, volume 7 (1977), pages 249-264.
- Ruetzler, K., and B. Collette. "Reef Fishes Over Sponge Bottoms off the Mouth of the Amazon River." In *Proceedings, Third International Coral Reef Symposium*, pages 305-310. Coral Gables, Florida: University of Miami, 1977.
- Shulenberg, E., and J. L. Barnard. "Amphipods from an Abyssal Trap Set in the North Pacific Gyre." *Crustaceana*, volume 31 (1976), pages 241-258.
- Young, R. E., and Clyde F. E. Roper. "Intensity Regulation of Bioluminescence during Countershading in Living Midwater Animals." *Fishery Bulletin*, United States, volume 75, number 2, pages 239-253. 1977.
- Zimmerman, Roger J., and J. L. Barnard. "A New Genus of Primitive Marine Hadziid (Amphipoda) from Bimini and Puerto Rico. In *Proceedings of the Biological Society of Washington*, volume 89, pages 565-580. 1977.

Department of Mineral Sciences

- Appleman, D. E., K. M. Towe, and W. U. Berthold. "The Crystallography of *Patellina Corrugata* Williamson: a-Axis Preferred Orientation." *Journal of Foraminiferal Research*, volume 7, number 1 (1977), pages 58-61.
- Aumento, F., W. G. Melson, et al. "Chemical Stratigraphy of Leg 45 Basalts: Electron Probe Analyses of Glasses." *Initial Reports of the Deep Sea Drilling Project*, volume 37, 1977.
- Byerly, G. R., W. G. Melson, J. A. Nelen, and E. Jarosewich. "Abyssal Basaltic Glasses as Indicators of Magma Composition." *Smithsonian Contributions to the Earth Sciences*, number 19, pages 22-30, 1977.
- Clarke, R. S., Jr., and J. I. Goldstein. "Schreibersite Growth and Its Influence on the Metallography of Coarse Structured Iron Meteorites." *Meteoritics*, volume 11 (1976), page 262.
- Clarke, R. S., Jr., E. P. Henderson, and B. Mason. "The Harleton, Texas, Chondrite." *Smithsonian Contributions to the Earth Sciences*, number 19, pages 61-70, 1977.
- Desautels, P. E. "Gemstones." *Encyclopedia Britannica Yearbook*, 1976.
- . "Jade." *Smithsonian*, April 1977.
- Dube, A., B. J. Fredriksson, E. Jarosewich, J. A. Nelen, A. F. Noonan, J. O'Keefe, and K. Fredriksson. "Eight L-Group Chondrites: A Comparative Study." *Smithsonian Contributions to the Earth Sciences*, number 19, pages 71-82, 1977.
- Dunn, Pete J. "Gemmological Notes." *Journal of Gemmology*, volume 15 (1976), pages 113-118.
- . "Genthelvite and the Helvine Group." *Mineralogical Magazine*, volume 40 (1976), pages 627-636.
- . "Buergerite, Uniformity of Composition." *The American Mineralogist*, volume 61 (1976), pages 1029-1030.

- . "Gem Notes." *Gems and Gemology*, volume 15 (1976), pages 199–202.
- . "Prosopite, an Effective Turquoise Substitute." *Journal of Gemmology*, volume 15 (1976), pages 205–208.
- . "Observations on the Slocum Stone." *Gems and Gemology*, volume 15 (1977), pages 252–256.
- . "Achrematite Discredited." *The American Mineralogist*, volume 62 (1977), page 170.
- . "Apatite, a Guide to Species Nomenclature." *Mineralogical Record*, volume 8 (1977) pages 78–82.
- . "The Helvite Group." *Mineralogical Record*, volume 8 (1977) pages 92–93.
- . "The Use of the Electron Microprobe in Gemmology." *Journal of Gemmology*, volume 15 (1977), pages 248–258.
- . "The U.S. National Mineral Collection." *The American Mineralogist*, volume 62 (1977), page 179.
- . "Uvite, a Newly Classified Gem Tourmaline." *Journal of Gemmology*, volume 15 (1977), pages 300–308.
- . Mineralogical Notes: Fluellite from North Carolina." *Mineralogical Record*, volume 8 (1977), pages 392–393.
- . "Mineralogical Notes, Ferberite from Panasqueira, Portugal, and Wolframite from Korea." *Mineralogical Record*, volume 8 (1977).
- Dunn, Pete J., D. E. Appleman, J. S. Nelen, and J. A. Norberg. "Uvite, a New (Old) Common Member of the Tourmaline Group." *Mineralogical Record*, volume 8 (1977), pages 100–108.
- Dunn, Pete J., R. Rouse, B. Cannon, and J. A. Nelen. "Zektzerite, a New Lithium Sodium Zirconium Silicate Related to Tuhualite and the Osumilite Group." *The American Mineralogist*, volume 62 (1977), pages 416–420.
- Embry, Peter G., P. J. Dunn, and A. Clark. "Blue Wulfenite from Tsumeb." *Mineralogical Record*, volume 8 (1977), pages 86–87.
- Fiske, Richard S. [Review] *Volcanoes of the Earth*, by Fred M. Bullard. *Science Books and Films*, AAAS, April 1977; and *American Scientist*, May 1977.
- Fredricksson, K. [Review] *Handbook of Iron Meteorites, Their History, Distribution, Composition and Structure*, by V. F. Buchwald. *Science*, volume 194 (1976), pages 313–314.
- Fredricksson, K., A. Noonan, P. Brenner, and C. Sudre. "Bulk and Major Phase Composition of Eight Hypersthene Achondrites." *Meteoritics*, volume 11 (1976), pages 278–280.
- Fudali, Robert F. "Geophysical and Geologic Investigations of Some 'Accidents Circulaires' in Mauritania." *National Geographic Society Research Reports for 1969*, pages 123–129, 1977.
- Jarosewich, Eugene, and B. Mason. "Composition of Lunar Basalts 10069, 10071 and 12008." *Lunar Sample Studies*, NASA, 1977.
- King, E. A., E. Jarosewich, D. G. Brookings. "Petrography and Chemistry of the Faucett Meteorite, Buchanan County, Missouri." *Meteoritics*, volume 12 (1977), pages 13–20.
- Kirchner, E., K. Keil, C. B. Gomez, and J. Nelen. "Studies of Brazillian Meteorites V. Evidence for Shock Metamorphism in the Paranaiba, Matto Grosso, Chondrite." *Revista Brasileira de Geociencias*, volume 7 (1977).
- Mason, Brian. "The Ras Tanura, Saudi Arabia, Chondrite." *Smithsonian Contributions to the Earth Sciences*, number 19, page 83, 1977.
- Mason, Brian, and P. M. Martin. "Geochemical Differences Among Components of the Allende Meteorite." *Smithsonian Contributions to the Earth Sciences*, number 19, pages 84–95, 1977.
- Melson, W. G., G. R. Byerly, J. A. Nelen, T. O'Hearn, T. L. Wright, and T. L. Vallier. "A Catalog of the Major Element Chemistry of Abyssal Volcanic

- Glasses." *Smithsonian Contributions to the Earth Sciences*, number 19, pages 31–60, 1977.
- Melson, W. G., T. L. Vallier, T. L. Wright, G. Byerly and J. Nelen. "Chemical Diversity of Abyssal Volcanic Glass Erupted along Pacific, Atlantic, and Indian Ocean Sea-Floor Spreading Center." In "The Geophysics of the Pacific Ocean Basin and Its Margin," *Geophysical Monograph 19*, pages 351–377. American Geophysical Union, 1976.
- Noonan, A. F., and J. A. Nelen. "A Petrographic and Mineral Chemistry Study of the Weston, Connecticut, Chondrite." *Meteoritics*, number 11 (1976), pages 111–130.
- Noonan, A. F., K. Fredriksson, E. Jarosewich, and P. Brenner, "Mineralogy and Bulk, Chondrule, Size-fraction Chemistry of the Dhajala, Indian, Chondrite." *Meteoritics*, number 11 (1976), pages 340–343.
- Noonan, A. F., J. Nelen, and K. Fredriksson. "Mineralogy and Chemistry of Xenoliths in the Weston Chondrite—Ordinary and Carbonaceous." *Meteoritics*, number 11 (1976), pages 344–346.
- Noonan, A. F., E. Jarosewich, and R. S. Clarke, Jr. "The St. Mary's County, Maryland, Chondrite." *Smithsonian Contributions to the Earth Sciences*, number 19 (1977), pages 96–103.
- Olsen, E., T. E. Bunch, E. Jarosewich, A. F. Noonan, and G. I. Huss. "Happy Canyon: A New Type of Enstatite Chondrite." *Meteoritics*, number 12 (1977), pages 109–123.
- Simkin, T. [Review] *Afar Depression of Ethiopia*, edited by A. Pilger and A. Rosler. *American Mineralogist*, volume 62 (1977), pages 835–836.
- . "Historic Volcanism and Eruption Forecasting in Latin America." In symposium volume: *Geophysics in the Americas*. Panamerican Institute of Geography and History, August, 1977.
- Simkin, T., and R. S. Fiske. "Volcanology—A Review of 1976." *Geotimes*, January 1977, pages 42–43.
- White, John S., Jr., I. E. Grey, and D. J. Lloyd. "The Structure of Crichtonite and Its Relationship to Senaite." *American Mineralogist*, volume 61 (1976), pages 1203–1212.
- . "La Collection Mineralogique du 'Smithsonian Institution'" *Le Monde et les Mineraux*, number 15 (1976), pages 394–397.
- White, John S., Jr., and W. E. Wilson. "An Experiment in Specimen Appraisal." *Mineralogical Record*, volume 8 (1977), pages 38–40 and 47–48.
- . "The Kegel Collection." *Mineralogical Record*, volume 8 (1977), pages 51–53.
- Wlotzka, F., and E. Jarosewich. "Mineralogical and Chemical Composition of Silicate Inclusions in the El Taco Campo Del Cielo, Iron Meteorite." *Smithsonian Contributions to the Earth Sciences*, volume 19, pages 104–125, 1977.

Department of Paleobiology

- Adey, W. H. "Shallow Water Holocene Bioherms of the Caribbean Sea and West Indies." In *Proceedings: Third International Coral Reef Symposium, Volume 2, Geology*, edited by D. L. Taylor, pages xxi–xxiv. Miami, Florida: Rosenstiel School of Marine and Atmospheric Science, University of Miami, 1977.
- Adey, W. H., and R. B. Burke. "Holocene Bioherms of Lesser Antilles—Geologic Control of Development." In *Studies in Geology No. 4, Reefs and Related Carbonates—Ecology and Sedimentology*, edited by S. H. Frost, M. P. Weiss, and J. B. Saunders, pages 67–81. Tulsa, Oklahoma: The American Association of Petroleum Geologists, 1977.

- Adey, W. H., P. J. Adey, R. B. Burke, and Leslie Kaufman. "The Holocene Reef Systems of Eastern Martinique, French West Indies." *Atoll Research Bulletin*, number 218, pages 1–40, 1977.
- Adey, W. H., I. G. Macintyre, Robert Stuckenrath, and R. F. Dill. "Relict Barrier Reef System off St. Croix: Its Implications with Respect to Late Cenozoic Coral Reef Development in the Western Atlantic." In *Proceedings: Third International Coral Reef Symposium, Volume 2, Geology*, edited by D. L. Taylor, pages 15–21. Miami, Florida: Rosenstiel School of Marine and Atmospheric Science, University of Miami, 1977.
- Benson, R. H. "The Evolution of *Oblitacythereis* and *Paleocosta* (Trachyleberididae, Neogene) from the Mediterranean and Atlantic." *Smithsonian Contributions to Paleobiology*, number 33, 1977.
- . "The Evolution of the Ostracode *Costa* Analyzed by 'Theta-Rho Difference'." In *Proceedings of the Fifth International Symposium on Evolution of Post-Paleozoic Ostracoda*, edited by Gerhard Hartmann. *Abhandlungen und Verhandlungen des Naturwissenschaftlichen Vereins in Hamburg*, (NF) 18/19 [supplement], pages 127–139. 1976.
- . "Miocene Deep-Sea Ostracodes of the Iberian Portal and the Balearic Basin." *Marine Micropaleontology*, volume 1, number 3 (1976), pages 249–262.
- , editor. "The Biodynamic Effects of the Messinian Salinity Crisis, a Micropaleontological Examination of the Events of the Late Miocene in the Mediterranean." *Palaeogeography, Palaeoclimatology, Palaeoecology*, volume 20, numbers 1 and 2 (1976), 170 pages.
- . "Preface." In *The Biodynamic Effects of the Messinian Salinity Crisis, a Micropaleontological Examination of the Events of the Late Miocene in the Mediterranean*, edited by R. H. Benson. *Palaeogeography, Palaeoclimatology, Palaeoecology*, volume 20, numbers 1 and 2 (1976), pages 1–3.
- . "Testing the Messinian Salinity Crisis Biodynamically: An Introduction." *Palaeogeography, Palaeoclimatology, Palaeoecology*, volume 20, numbers 1 and 2 (1976), pages 3–11.
- . "Changes in the Ostracodes of the Mediterranean with the Messinian Salinity Crisis." *Palaeogeography, Palaeoclimatology, Palaeoecology*, volume 20, numbers 1 and 2 (1976), pages 147–170.
- Berggren, W. A., R. H. Benson, B. U. Hag, W. R. Riedel, A. Sanfilippo, H. J. Schrader, and R. C. Tjalsma. "The El Cuervo Section (Andalusia, Spain): Micropaleontologic Anatomy of an Early Late Miocene Lower Bathyal Deposit." *Marine Micropaleontology*, volume 1, number 3 (1976), pages 195–247.
- Brawley, S. H., and W. H. Adey. "Territorial Behavior of Threespot Damsel-fish (*Eupomacentrus planifrons*) Increases Reef Algal Biomass and Productivity." *Environmental Biology of Fishes*, volume 2, number 1 (1977), pages 45–51.
- Buzas, M. A., R. K. Smith, and K. A. Beem. "Ecology and Systematics of Foraminifera in Two *Thalassia* Habitats, Jamaica, West Indies." *Smithsonian Contributions to Paleobiology*, number 31, 1977.
- Cifelli, Richard. "Evolution of Ocean Climate and Planktonic Foraminifera." *Nature*, volume 264, number 5585 (1976), pages 431–432.
- Cifelli, Richard, and D. J. Belford. "The Types of Several Species of Tertiary Planktonic Foraminifera in the Collections of the U. S. National Museum of Natural History." *Journal of Foraminiferal Research*, volume 7, number 2 (1977), pages 100–105.
- Cifelli, Richard, and C. Benier. "Planktonic Foraminifera from near the West African Coast and a Consideration of Faunal Parcelling in the North At-

- lantic." *Journal of Foraminiferal Research*, volume 6, number 4 (1976), pages 258-273.
- Coates, A. G., E. G. Kauffman, and N. F. Sohl. [Abstract] "Cyclic Incursions of Tethyan Biotas into the Cretaceous Temperate Realms." *Journal of Paleontology*, volume 51, supplement to number 2, *North American Paleontological Convention II, Abstracts of Papers*, page 7, 1977.
- Conner, J. L., and W. H. Adey. "The Benthic Algal Composition, Standing Crop, and Productivity of a Caribbean Algal Ridge." *Atoll Research Bulletin*, number 211, pages 1-15, 1977.
- Cooper, G. A., and R. E. Grant. "Permian Brachiopods of West Texas, V." *Smithsonian Contributions to Paleobiology*, number 24, pages 663-780, 2609-2923, and 2924-3159, 1976.
- Glynn, P. W., and I. G. Macintyre. "Growth Rate and Age of Coral Reefs on the Pacific Coast of Panama." In *Proceedings: Third International Coral Reef Symposium, Volume 2, Geology*, edited by D. L. Taylor, pages 251-259. Miami, Florida: Rosenstiel School of Marine and Atmospheric Science, University of Miami, 1977.
- Got, Henri, D. J. Stanley, and Denis Sorel. "Northwestern Hellenic Arc: Concurrent Sedimentation and Deformation in a Compressive Setting." *Marine Geology*, volume 24, number 1 (1977), pages 21-36.
- Hickey, L. J. "Stratigraphy and Paleobotany of the Golden Valley Formation (Early Tertiary) of Western North Dakota." *Geological Society of America Memoir 150*, pages 1-181, 1977.
- . [Abstract] "Changes in Angiosperm Flora across the Cretaceous-Paleocene Boundary." *Journal of Paleontology*, volume 51, supplement to number 2: *North American Paleontological Convention II, Abstracts of Papers*, pages 14-15, 1977.
- Kauffman, E. G., special editor. "Field Guide: North American Paleontological Convention II, Cretaceous Facies, Faunas, and Paleoenvironments across the Western Interior Basin." *The Mountain Geologist*, volume 14, numbers 3 and 4 (1977), 274 pages.
- . "Geological and Biological Overview: Western Interior Cretaceous Basin." *The Mountain Geologist*, volume 14, numbers 3 and 4 (1977), pages 75-99.
- . "Upper Cretaceous Cyclothems, Biotas, and Environments, Rock Canyon Anticline, Pueblo, Colorado." *The Mountain Geologist*, volume 14, numbers 3 and 4 (1977), pages 129-152.
- . "Illustrated Guide to Biostratigraphically Important Cretaceous Macrofossils, Western Interior Basin, U.S.A." *The Mountain Geologist*, volume 14, numbers 3 and 4 (1977), pages 225-274.
- . [Abstract] "Cretaceous Extinction and Collapse of Marine Trophic Structure." *Journal of Paleontology*, volume 51, supplement to number 2, *North American Paleontological Convention II, Abstracts of Papers*, page 16, 1977.
- . [Abstract] "Benthic Communities in Black Shales of an 'Anaerobic' Jurassic Basin: the Positonienschiefer." *Journal of Paleontology*, volume 51, supplement to number 2, *North American Paleontological Convention II, Abstracts of Papers*, pages 16-17, 1977.
- . "Systematic, Biostratigraphic, and Biogeographic Relationships between Middle Cretaceous Euramerican and North Pacific Inoceramidae." In *Mid-Cretaceous Events, Hokkaido Symposium, 1976*, edited by T. Matsumoto. *Paleontological Society of Japan, Special Paper number 21* (1977), pages 169-212.
- . "Evolutionary Rates and Biostratigraphy." In *Concepts and Methods of Biostratigraphy*, edited by E. G. Kauffman and J. E. Hazel, pages 109-141. Stroudsburg: Dowden, Hutchinson and Ross, Inc., 1977.

- . [Review] *Jurassic Environments*, by Anthony Hallam. *Journal of Paleontology*, volume 51, number 1 (1977), pages 203–206.
- . [Review] *Oysters*, by H. B. Stenzel. *Journal of Paleontology*, volume 51, number 2 (1977), pages 427–429.
- Kauffman, E. G., and J. E. Hazel, editors. *Concepts and Methods of Biostratigraphy*, 658 pages. Stroudsburg: Dowden, Hutchinson and Ross, Inc., 1977.
- . "Preface." In *Concepts and Methods of Biostratigraphy*, edited by E. G. Kauffman and J. E. Hazel, pages iii–v. Stroudsburg: Dowden, Hutchinson and Ross, Inc., 1977.
- Kauffman, E. G., and D. E. Powell. "Stratigraphic, Paleontologic, and Paleoenvironmental Analysis of the Upper Cretaceous Rocks of Cimarron County, Northwestern Oklahoma. Part 2: Paleontology." *Geological Society of America Memoir 149*, pages 47–150, 1977.
- Kauffman, E. G., and P. A. Scholle. [Abstract] "Abrupt Biotic and Environmental Changes During Peak Cretaceous Transgressions in Euramerica." *Journal of Paleontology*, volume 51, supplement to number 2, *North American Paleontological Convention II, Abstracts of Papers*, page 16, 1977.
- Kauffman, E. G., and J. R. Steidtmann. [Abstract] "Are These the Oldest Known Trace Fossils?" *Geological Society of America Abstracts with Programs*, volume 8, number 6 (1976), pages 947–948.
- Kauffman, E. G., D. E. Hattin, and J. D. Powell. "Stratigraphic, Paleontologic, and Paleoenvironmental Analysis of the Upper Cretaceous Rocks of Cimarron County, Northwestern Oklahoma, Part 1: Stratigraphy and Paleoenvironments." *Geological Society of America Memoir 149*, pages 1–46, 1977.
- Kier, P. M. "Triassic Echinoids." *Smithsonian Contributions to Paleobiology*, number 30, 1977.
- . "The Poor Fossil Record of the Regular Echinoid." *Paleobiology*, volume 3, number 2 (1977), pages 168–174.
- Macintyre, I. G. [Abstract] "Porosity Distribution Throughout a Modern Caribbean Fringing Reef, Galeta Point, Panama." 1977 AAPG-SEPM Annual Convention Program. *American Association of Petroleum Geologists Bulletin*, volume 61, number 5 (1977), page 810.
- . "Distribution of Submarine Cements in a Modern Caribbean Fringing Reef, Galeta Point, Panama." *Journal of Sedimentary Petrology*, volume 47, number 2 (1977), pages 503–516.
- Maldonado, Andres, and D. J. Stanley. "Lithofacies as a Function of Depth in the Strait of Sicily." *Geology*, volume 5, number 2 (1977), pages 111–117.
- Miller, J. A., and I. G. Macintyre. *Field Guidebook to the Reefs of Belize*, 36 pages. Miami Beach: The Atlantic Reef Committee, University of Miami, 1977.
- Pierce, J. W., and F. T. Dulong. "Discharge of Suspended Particulates from Rhode River Subwatersheds." In *Proceedings of the Conference on Watershed Research in Eastern North America*, edited by D. L. Correll, pages 531–553. Washington, D. C.: Smithsonian Institution, 1977.
- Ray, C. E. "Seals and Walruses of Florida." *The Florida State Museum, The Plaster Jacket*, number 27 (1977), pages 1–15.
- . "Geography of Phocid Evolution." *Systematic Zoology*, volume 25, number 4 (1976), pages 391–406.
- . "Fossil Marine Mammals of Oregon." *Systematic Zoology*, volume 25, number 4 (1976), pages 420–436.
- Repenning, C. A., and C. E. Ray. "The Origin of the Hawaiian Monk Seal." In *Proceedings of the Biological Society of Washington*, volume 89, number 58, pages 667–688, 1977.
- Scholle, P. A., and E. G. Kauffman. [Abstract] "Paleoecological Implications of Stable Isotope Data from Upper Cretaceous Limestones and Fossils from the U. S. Western Interior." *Journal of Paleontology*, volume 51, supplement

- to number 2, *North American Paleontological Convention II, Abstracts of Papers*, pages 24–25, 1977.
- Siegel, F. R., J. W. Pierce, S. Bloch, and P. P. Hearn. "Mineral Suspensate Geochemistry, Argentine Continental Shelf: R/V HERO Cruise 75-3." *Antarctic Journal of the United States*, volume 11, number 4 (1976), pages 230–231.
- Siegel, F. R., J. W. Pierce, F. T. Dulong, and P. P. Hearn. "Suspended Sediments in Southern Chilean Archipelago Waters: R/V HERO Cruise 76-4." *Antarctic Journal of the United States*, volume 11, number 4 (1976), pages 228–230.
- Stanley, D. J. "Recent Tectonic Overprint on Cobblestone Deposition in the Northwestern Hellenic Arc." In *Symposium on the Structural History of the Mediterranean Basins*, edited by B. Biju-Duval, and L. Montadert, pages 433–445. Paris: Editions Technip, 1976.
- . "Post-Miocene Depositional Patterns and Structural Displacement in the Mediterranean." In *The Ocean Basins and Margins—The Mediterranean Sea*, edited by A. E. M. Nairn and F. G. Stehli, pages 77–150. New York: Plenum Press, 1977.
- Stanley, D. J., and Andres Maldonado, "Nile Cone: Late Quaternary Stratigraphy and Sediment Dispersal." *Nature*, volume 266, number 5598 (1977), pages 129–135.
- Stanley, D. J., and Constantine Perissoratis. "Aegean Sea Ridge Barrier—and—Basin Sedimentation." *Marine Geology*, volume 24, number 2 (1977), pages 97–107.
- Stanley, D. J., and P. T. Taylor, "Sediment Transport Down a Seamount Flank by a Combined Current and Gravity Process." *Marine Geology*, volume 23, numbers 1 and 2 (1977), pages 77–88.
- Stanley, D. J., Antonio Brambati, Henri Got, Gilbert Kelling, and Andres Maldonado. "Depositional Patterns (Pliocene and Quaternary) in Mobile Mediterranean Settings." In *Commission Internationale pour l'Exploration Scientifique de la Mer Mediterranee, 25th Congress Symposium*, pages 1–3, 1976.
- Steneck, R. S., and W. H. Adey. "The Role of Environment in Control of Morphology in *Lithophyllum congestum*, a Caribbean Algal Ridge Builder." *Botanica Marina*, volume 19, number 4 (1976), pages 197–215.
- Waller, T. R. [Abstract] "The Development of the Larval and Early Postlarval Shell of the Bay Scallop, *Argopecten irradians*." *Bulletin of the American Malacological Union, Inc. for 1976*, (1976), page 46.
- Young, D. K., M. A. Buzas, and M. W. Young. "Species Densities of Macrobenthos Associated with Seagrass: A Field Experimental Study of Pedation." *Journal of Marine Research*, volume 34, number 4 (1976), pages 577–592.

Department of Vertebrate Zoology

- Ash, J. S. "Bird Ringing in Ethiopia, Report No. 5, 1969–1975." *NAMRU-5 Technical Report*, Number 1 (1976), pages 1–17.
- . "Bird Ringing in Ethiopia, Report No. 6, 1969–1976." *NAMRU-5 Technical Report* (1977), pages 1–17.
- . "Four Species of Birds New to Ethiopia and Other Notes." *Bulletin of the British Ornithologists' Club*, volume 97, number 1 (1977), pages 4–9.
- . "The Ruddy Shelduck *Tadorna ferruginea* Breeding South of the Sahara." *Bulletin of the British Ornithologists' Club*, volume 97, number 2 (1977).
- Ash, J. S., and E. McConnell. "A Biological Distribution Map for Ethiopia." *Ethiopian Medical Journal*, volume 13 (1976), pages 37–39.

- Ashford, R. W., T. T. Palmer, J. S. Ash, and R. S. Bray. "Blood Parasites of Ethiopian Birds: A General Survey." *Journal of Wildlife Diseases*, volume 12 (1976), pages 409–426.
- Collette, Bruce B., and Ernest A. Lachner. "Fish Collections in the United States and Canada." *Copeia*, number 3 (August 1976), pages 625–642.
- Handley, C. O., Jr. "Descriptions of New Bats (Choeroniscus and Rhinophylla) from Colombia." In *Selected Readings in Mammalogy*, by J. K. Jones, Jr., S. Anderson, and R. S. Hoffman, pages 42–47. Museum of Natural History Monograph number 5. University of Kansas, November 1976. [Reprinted from *Proceedings of the Biological Society of Washington*, volume 79, pages 83–88. 1966]
- Heyer, W. Ronald. "Studies in Larval Amphibian Habitat Partitioning." *Smithsonian Contributions to Zoology*, number 242, 1976.
- . "The Presumed Tadpole of *Paratelmatobius lutzi* (Amphibia, Leptodactylidae)." *Papéis Avulsos, São Paulo*, volume 30, number 10 (1976), pages 133–135.
- . [Review] "Evolution of the Desert Biota." *Copeia*, number 3 (1976), pages 614–615.
- . "Notes on the Frog Fauna of the Amazon Basin." *Acta Amazonica*, volume 6, number 3 (1976), pages 369–378.
- . "A Discriminant Function Analysis of the Frogs of the Genus *Adenomera* (Amphibia: Leptodactylidae)." In *Proceedings of the Biological Society of Washington*, volume 89, number 51, pages 581–592. 1977.
- Heyer, W. Ronald, and Miriam H. Muedeking. "Notes on Tadpoles as Prey for Naiads and Turtles." *Journal of the Washington Academy of Sciences*, volume 66, number 4 (1977), pages 235–239.
- Heyer, W. Ronald, and A. Stanley Rand. "Foam Nest Construction in the Leptodactylid Frogs *Leptodactylus pentadactylus* and *Physalaemus pustulosus* (Amphibia, Anura, Leptodactylidae)." *Journal of Herpetology*, volume 11, number 2 (1977), pages 225–228.
- Karnella, Charles, and Robert H. Gibbs, Jr. "The Lanternfish *Lobianchia dofleini*: An Example of the Importance of Life-History Information in Prediction of Oceanic Sound Scattering." In *Oceanic Sound Scattering Prediction*, edited by Neil R. Andersen and Bernard J. Zahuranec, pages 361–379.
- Krueger, William H., Robert H. Gibbs, Jr., Robert C. Kleckner, Aimee A. Keller, and Michael J. Keene. "Distribution and Abundance of Mesopelagic Fishes on Cruises 2 and 3 at Deepwater Dumpsite 106." *NOAA Dumpsite Evaluation Report 77-1* (1977), Volume 2, pages 377–422; Volume 3, pages 735–798.
- Lachner, Ernest A., et al. "A National Plan for Ichthyology." *Copeia*, number 3 (August 1976), pages 618–625.
- Olson, Storrs L. "A Jacana from the Pliocene of Florida (Aves: Jacanidae)." In *Proceedings of the Biological Society of Washington*, volume 89, number 19, pages 259–264. 1976.
- . "Fossil Woodcocks: An Extinct Species from Puerto Rico and an Invalid Species from Malta (Aves: Scolopacidae: *Scolopax*)." In *Proceedings of the Biological Society of Washington*, volume 89, number 20, pages 265–274. 1976.
- . "Additional Notes on Subfossil Bird Remains from Ascension Island." *Ibis*, volume 119, number 1 (1977), pages 37–43.
- . "A Synopsis of the Fossil Rallidae." In *Rails of the World*, by S. D. Ripley, pages 339–373. Boston: David Codine, March 1977.
- . "The Identity of the Fossil Ducks Described from Australia by C. W. De Vis." *Emu*, volume 77, number 3 (1977), pages 129–131.

- . "Notes on Subfossil Anatidae from New Zealand, Including a New Species of Pink-eared Duck (*Malacorhynchus*)." *Emu*, volume 77, number 3 (1977), pages 132–135.
- Olson, Storrs L., and David W. Steadman. "A New Genus of Flightless Ibis (Aves: Threskiornithidae) and Other Fossil Birds from Cave Deposits in Jamaica." In *Proceedings of the Biological Society of Washington*, volume 90, number 2, pages 447–457. 1977.
- Olson, Storrs L., and Alexander Wetmore. "Preliminary Diagnoses of Two Extraordinary New Genera of Birds from Pleistocene Deposits in the Hawaiian Islands." In *Proceedings of the Biological Society of Washington*, volume 89, number 18, pages 247–258. 1976.
- Ripley, S. Dillon. "Reconsideration of *Athene blewitti* (Hume)," *Journal of the Bombay Natural History Society*, volume 73, number 1 (1976), pages 1–4.
- . *Rails of the World*, xx + 406 pages, 41 colored plates, 17 maps, 26 figures, and a chapter on fossil species by Storrs L. Olson. Boston: David R. Godine, 1977.
- . "The World of Birds and Books." *The Yale University Library Gazette*, volume 52, number 1 (1977), pages 1–9.
- . "Rails of the World." *American Scientist*, volume 64, number 6 (November–December 1976), pages 628–635.
- . [Foreword] *Birds of the West Coast*, by Fenwick Lansdowne. Toronto: M. F. Feheley Arts, Ltd., 1976.
- . "Bird that is Loath to Fly but Roams Afar all the Same." *Smithsonian*, volume 7, number 12 (March 1977), pages 88–93.
- Risebrough, R. W., G. E. Watson, and J. P. Angle. "A Red Phalarope (*Phalaropus fulicarius*) in Breeding Plumage on Anvers Island." *Antarctic Journal*, volume 11, number 4 (December 1976), page 226.
- Setzer, Henry W. "Obituary: A. Remington Kellogg—1892-1969." *Journal of Mammalogy*, volume 58, number 2 (May 1977), pages 251–253.
- Setzer, Henry W., and E. Lendell Cockrum. "Types and Type Localities of North African Rodents." *Mammalia*, volume 40, number 4 (1976), pages 633–670.
- Slud, Paul. [Review] *Avifauna of Northwestern Colombia, South America*, by Jürgen Haffer. *The Wilson Bulletin*, volume 89, number 1 (1977), pages 187–189.
- Springer, Victor G., C. Lavett Smith, and Thomas H. Fraser. "*Anisochromis straussi*, New Species of Protogynous Hermaphroditic Fish, and Synonymy of Anisochromidae, Pseudoplesiopidae, and Pseudochromidae." *Smithsonian Contributions to Zoology*, number 252, 1977.
- Thorington, Richard W., Jr., and Robert E. Vorek. "Observations on the Geographic Variation and Skeletal Development of *Aotus*." *Laboratory Animal Science*, volume 26, number 6 (December 1976), pages 1006–1021.
- Urban, E. K., S. J. Tyler, and J. S. Ash. "Ethiopia: A Status Report of the Wetlands in Ethiopia, February 1974." In *Proceedings of the International Conference on Conservation of Wetlands and Waterfowl*, pages 89–91. Heiligenhafen, Germany, 1976.
- Watson, George E. "Proceedings of the 94th Stated Meeting of the American Ornithologists' Union." *The Auk*, volume 94, number 1 (1977), pages 123–139.
- . "New World Checklist." [Review] *Checklist of the World's Birds*, by E. S. Gruson and R. A. Foster. *Atlantic Naturalist*, volume 31, number 4 (1976), pages 175–176.
- . "Birds in the Bush." [Review] *A. B. A. Checklist*. *Atlantic Naturalist*, volume 31 (Fall 1976), pages 121–122.

- . "Introduction," pages xv-xix. *The Bluebird, How You Can Help Its Fight for Survival*, by Lawrence Zeleny. Bloomington: Indiana University Press, Summer 1976.
- . "... And Birds Took Wing." In *Our Continent: A Natural History of North America*, pages 98-106, National Geographic Society, Washington, D. C., Fall 1976.
- . "An Unusual Order of Birds." [Review] *Penguins, Past and Present, Here and There*, by G. G. Simpson. *Science*, volume 194, number 4262 (October 1976), page 312.
- Weitzman, Stanley H. "*Hyphessobrycon socolofi*, a New Species of Characoid Fish (Teleostei: Characidae) from the Rio Negro of Brazil." In *Proceedings of the Biological Society of Washington*, volume 90, number 2, pages 326-347. August 1977.
- . "A New Species of Characoid Fish, *Hyphessobrycon diancistrus*, from the Rio Vichada, Orinoco River Drainage, Colombia, South America (Teleostei: Characidae)." In *Proceedings of the Biological Society of Washington*, volume 90, number 2, pages 348-357. August 1977.
- Weitzman, Stanley H., and Robert H. Kanazawa. "*Ammocryptocharax elegans*, A New Genus and Species of Riffle-Inhabiting Characoid Fish (Teleostei: Characidae) from South America." In *Proceedings of the Biological Society of Washington*, volume 89, number 26, pages 325-346. October 1976.
- . "A New Species of Pygmy Characoid Fish from the Rio Negro and Rio Amazonas, South America (Teleostei: Characidae)." In *Proceedings of the Biological Society of Washington*, volume 90, number 1, pages 149-160. June 1977.
- Zug, G. R. "The Matamata (Testudines: Chelidae) Is *Chelus* not *Chelys*." *Herpetologica*, volume 33, number 1 (1977), pages 53-54.
- . "Once More into the Loch." *1978 Yearbook of Science and the Future*, page 154-169. Chicago: Encyclopaedia Britannica, Inc., 1978.

NATIONAL ZOOLOGICAL PARK

Office of Animal Health

- Bush, M., P. K. Ensley, K. Mehren, and W. Rapley. "Immobilization of Giraffes with Xylazine and Etorphine Hydrochloride." *Journal of the American Veterinary Medical Association*, volume 169 (1976), pages 884-885.
- Bush, M., D. W. Heese, C. W. Gray, and A. E. James. "Surgical Repair of Tusk Injury (Pulpectomy) in an Adult, Male Forest Elephant (*Loxodonta cyclotis*)." *Journal of the American Dental Association*, volume 93 (1976), pages 371-375.
- Bush, M., J. L., Hughes, P. K. Ensley, and A. E. James. "Fracture Repair in Exotics Using Internal Fixation." *Journal of the American Animal Hospital Association*, volume 12 (1976), pages 746-753.
- Bush, M., and A. E. James. "A New System of Casting Fractures in Exotic Animals." *Veterinary Medicine and Small Animal Clinic*, volume 71 (1976), pages 1288-1295.
- Bush, M., and S. A. Koch. "Surgical Correction of a Bilateral Lens Luxation in an African Lion." *Journal of the American Veterinary Medical Association*, volume 169 (1976), pages 987-988.
- Bush, M., U. S. Seal, E. Smith, M. D. Lewis, and L. M. Bush. "Neonatal Anemia and Growth in Sable Antelope (*Hippopotragus niger*)." In *Proceedings of the Eighteenth International Symposium on Disease of Zoo Animals*, pages 361-379. Innsbruck, Austria, 1976.

- Ensley, P. K., and M. Bush. [Case report] "Rectal Mucosal Prolapse in an Indian Rhinoceros (*Rhinoceros unicornis*)." *Journal of Zoo Animal Medicine*, volume 7 (1976), page 22.
- Freedman, M. T., M. Bush, G. R. Novak, R. M. Heller, Jr., and A. E. James, Jr. "Nutritional and Metabolic Bone Disease in a Zoological Population." *Skeletal Radiology*, volume 1 (1976), pages 87–96.
- James, A. E., J. B. Brayton, G. Novak, D. Wight, T. K. Sheehan, M. Bush, and R. C. Sanders. "The Use of Diagnostic Ultrasound in Evaluation of the Abdomen in Primates, with Emphasis on the Rhesus Monkey (*Macaca mulatta*)." *Journal of Medical Primatology*, volume 5 (1976), pages 160–175.
- James, A. E., M. Bush, P. A. Osterman, R. M. Heller, and G. R. Novak. "Radiologic Imaging of Human Diseases in Exotic Animals." *Journal of the American Medical Association*, volume 235 (1976), pages 184–188.
- James, A. E., G. Hutchins, M. Bush, T. K. Natarajan, and B. Burns. "How Birds Breathe: Correlation Radiographic with Anatomical and Pathologic Studies." *Journal of the American Veterinary Radiological Society*, volume 17 (1976), pages 77–86.
- James, A. E., F. O. Osterman, M. Bush, T. Sheehan, G. Novak, D. Wight, and R. C. Sanders. "The Use of Compound B-Mode Ultrasound in Abdominal Disease of Animals." *Journal of the American Veterinary Radiological Society*, volume 17 (1976), pages 106–112.
- Smeller, J., and M. Bush. "A Physiological Study of Immobilized Cheetahs (*Acinonyx jubatus*)." *Journal of Zoo Animal Medicine*, volume 7 (1976), pages 5–7.

Office of Animal Management

- Demeter, B. J. "Observations on the Care, Breeding and Behavior of a Giant Day Gecko (*Phelsuma madagascariensis*) at the National Zoological Park, Washington, D.C." *International Zoo Yearbook*, volume 16, pages 130–133, 1976.
- Egoscue, J. J. "Flea Exchange between Deer Mice and Some Associated Small Mammals in Western Utah." *Great Basin Naturalist*, volume 36 (1976), pages 475–480.
- Marcellini, D. L. "Some Aspects of the Thermal Ecology of the Gecko (*Hemidactylus frenatus*)." *Herpetologica*, volume 32 (1976), pages 341–345.
- Marcellini, D. L., and T. E. Keefer. "Analysis of the Gliding Behavior of *Ptychozoon lionatum* (Reptilia: Gekkonidae)." *Herpetologica*, volume 32 (1976), pages 362–366.
- Xanten, W. A., H. Kaska, and T. J. Olds. "Breeding the Binturong (*Arctictis binturong*) at the National Zoological Park, Washington, D. C." *International Zoo Yearbook*, volume 16, pages 117–119, 1976.

Conservation and Research Center

- Davis, P. S., and G. A. Greenwell. "Successful Hatching of a North Island Brown Kiwi (*Apteryx australis mantelli*) at the National Zoological Park, Washington, D.C." *International Zoo Yearbook*, volume 16, pages 86–88, 1976.
- Gilbert, S., and G. A. Greenwell. "An Unusually Prolific Breeding Season in the Bornean Great Argus Pheasant (*Argusianus argus grayi*)." *International Zoo Yearbook*, volume 16, page 93–96, 1976.
- Greenwell, G. A. "The National Zoological Park Takes a Look at Pheasant Breeding." *American Pheasant and Waterfowl Society Magazine*, volume 76–79 (1976), pages 4–10.

- Wemmer, C., and G. L. Johnson. "Egg-breaking Behavior in a Yellow-Throated Marten; *Martes flavigula* (Mustelidae; Carnivora)." *Z. Saugetierkunde*, volume 41 (1976), pages 58–60.
- Wemmer, C., M. Von Ebers, and K. Scow. "An Analysis of the Chuffing Vocalization in the Polar Bear (*Ursus maritimus*)." *Journal of Zoology*, London, volume 180 (1976), pages 425–439.

Office of Pathology

- Bush, M., D. Brownstein, R. J. Montali, A. E. James, Jr., and M. J. G. Appel. "Vaccine Induced Canine Distemper in a Lesser Panda (*Ailures fulgens*)." *Journal of the American Veterinary Medical Association*, volume 169 (1976), pages 959–960.
- Bush, M., A. E. James, Jr., R. J. Montali, and F. P. Seitik. "Pulmonary Alveolar Microlithiasis in a Binturong (*Arctictis binturong*): A Case Report." *Journal of the American Veterinary Radiological Society*, volume 17 (1976), pages 157–160.
- Bush, M., R. J. Montali, G. R. Novak, and A. E. James, Jr., "The Healing of Avian Fractures: A Histological Xeroradiographic Study." *Journal of the American Animal Hospital Association*, volume 12 (1976), pages 768–773.
- Montali, R. J. "Ear Mites in a Horse." *Journal of the American Veterinary Medical Association*, volume 169 (1976), pages 630–631.
- . [Summary of Proceedings] "Symposium on Mycobacterial Infections of Zoo Animals." *Journal of the American Veterinary Medical Association*, volume 169 (1976), pages 177–178.
- . [Summary] "Proceedings of Symposium on Mycobacterial Infections of Zoo Animals." *Journal of Zoo Animal Medicine*, volume 7 (1976), pages 5–7.
- Montali, R. J., M. Bush, and G. Greenwell. "An Eporntic of Duck Viral Enteritis in a Zoological Park." *Journal of the American Veterinary Medical Association*, volume 169 (1976), pages 954–958.
- Montali, R. J., M. Bush, C. O. Thoen, and E. Smith. "Tuberculosis in Captive Exotic Birds." *Journal of the American Veterinary Medical Association*, volume 169 (1976), pages 920–927.
- Osterman, F. A., W. R. Bell, R. J. Montali, G. R. Novak, and R. I. White, Jr. "Natural History of Autologous Blood Clot Embolization in Swine." *Investigative Radiology*, volume 11 (1976), pages 267–276.

Office of Zoological Research

- Brownell, R. L., Jr., and K. Ralls. [Review] *International Zoo Yearbook*, edited by N. Duplaix-Hall, volumes 14 and 15. *Journal of Mammalogy*, volume 57 (1976), page 612.
- Eisenberg, J. F. [Review] *Sociobiology: The New Synthesis*, by E. O. Wilson. *Animal Behavior*, volume 24 (1976), pages 705–706.
- Eisenberg, J. F., and J. Seidensticker. "Ungulates in Southern Asia: A Consideration of Biomass Estimates for Selected Habitats." *Biological Conservation*, volume 10 (1976), pages 293–308.
- Field, R. "Application of a Digitizer for Measuring Sound Spectrograms." *Behavioral Biology*, volume 17 (1976), pages 579–583.
- Golani, I. "Homeostatic Motor Processes in Mammalian Interactions: A Choreography of Display." In *Perspectives in Ethology*, edited by P. P. G. Bateson and P. H. Klopfer, volume 2, pages 69–134. New York: Plenum Press, 1976.
- Green, K. M. "The Nonhuman Primate Trade in Colombia." In *Neotropical Primates: Field Studies and Conservation*, page 85–98. Washington, D. C.: National Academy of Sciences, 1975.

- Kleiman, D. G. "An Updated Studbook for the Golden Lion Tamarin Completed." *AAZPA Newsletter*, volume 17 (1976), page 13.
- . "Will the Pot of Gold Have a Rainbow? Hope for Brazil's Golden Tamarins in North America." *Animal Kingdom*, volume 79 (1976), pages 2-6.
- . [Review] *Prosimian Biology: Duckworth's London*, edited by R. D. Martin, G. A. Doyle, and A. C. Walker. *Journal of Mammalogy*, volume 57 (1976), page 613.
- . [Review] *Lemur Biology*, edited by I. Tattersall and R. W. Sussman. *Journal of Mammalogy* volume 57 (1976), page 613.
- Mock, D. "Pair Formation Displays of the Great Blue Heron." *Wilson Bulletin*, volume 88 (1976), pages 185-230.
- Morton, E. S. "Vocal Mimicry in the Thick-Billed Euphonia." *Wilson Bulletin*, volume 88 (1976), pages 485-487.
- . "Zoo Studies: Bluebird Families." *Smithsonian Institution Research Reports*, number 15, 1976.
- . "The Adaptive Significance of Dull Coloration in Yellow Warblers." *Condor*, volume 78 (1976), page 423.
- Ralls, K. "Extremes of Sexual Dimorphism in Size in Birds." *Wilson Bulletin*, volume 88 (1976), pages 149-150.
- . "Mammals in which Females are Larger than Males." *Quarterly Review of Biology*, volume 51 (1976), pages 245-276.
- . [Review] *Being Female*, edited by Dana Raphael. *Quarterly Review of Biology*, volume 51 (1976), page 464.
- Seidensticker, J. "Ungulate Populations in Chitawan Valley, Nepal." *Biological Conservation*, volume 10 (1976), pages 183-210.
- . "On the Ecological Separation between Tigers and Leopards." *Biotropica*, volume 8, number 4 (1976), pages 225-234.
- Woodward, P. W. "Red-Footed Booby Helper at Great Frigate Bird Nests." *Condor*, volume 78 (1976), pages 264-265.

RADIATION BIOLOGY LABORATORY

- Adovasio, J. M., J. D. Gunn, J. Donahue, and R. Stuckenrath. "Progress Report on the Meadowcroft Rockshelter—A 16,000 Year Chronicle." In *Amerinds and Their Paleoenvironments in Northeastern North America*, *Annals of the N. Y. Academy of Sciences*, edited by W. S. Newman and B. Salwen, volume 288, pages 137-159. The New York Academy of Sciences, 1977.
- Correll, David L., John L. Edwards, and W. Shropshire, Jr. *Phytochrome: A Bibliography Prior to 1975*. Washington: Smithsonian Institution Press, 1977.
- Crowl, G. H., and R. Stuckenrath, Jr. "Geological Setting of the Shawnee-Minisink Paleoindian Archeological Site (36-Mr-43)." In *Amerinds and Their Paleoenvironments in Northeastern North America*, *Annals of the N. Y. Academy of Sciences*, edited by W. S. Newman and B. Salwen, volume 288, pages 218-222. The New York Academy of Sciences, 1977.
- Drake, B. G. "Seasonal Changes in Reflectance and Standing Crop Biomass in Three Salt Marsh Communities." *Plant Physiology*, volume 58 (1976), pages 696-699.
- . "Estimating Water Status and Biomass of Plant Communities by Remote Sensing." In *Ecological Studies, Analysis, and Synthesis*, edited by O. L. Lange and E. -D. Schulze, volume 19, page 432-438. New York: Springer-Verlag, 1976.
- Gantt, E., C. A. Lipschultz, and B. A. Zilinskas. "Phycobilisomes in Relation to the Thylakoid Membranes." In *Chlorophyll-Proteins, Reaction Centers*

- and *Photosynthetic Membranes*, Brookhaven Symposia in Biology, No. 28 (1976), pages 347–357.
- Goldberg, B., and W. H. Klein. "Variations in the Spectral Distribution of Daylight at Various Geographical Locations on the Earth's Surface." *Solar Energy*, volume 19 (1977), pages 3–13.
- Gray, B. H., J. Cosner, and E. Gantt. "Phycocyanins with Absorption Maxima at 637 nm and 623 nm from *Agmanellum quadruplicatum*." *Photochemistry and Photobiology*, volume 24 (1976), pages 299–302.
- Klein, W. H., and B. Goldberg. *Solar Radiation Measurements/1974–1975*. Washington, D. C.: Smithsonian Institution Press, 1976.
- Klein, W. H., B. Goldberg, and W. Shropshire, Jr. "Instrumentation for the Measurement of the Variation, Quantity and Quality of Sun and Sky Radiation." *Solar Energy*, volume 19 (1977), pages 115–122.
- Margulies, M. M., and A. Michaels. "Biosynthesis of Chloroplast Membrane Protein in *Chlamydomonas reinhardtii*." In *Acides Nucleiques et Synthèse des Proteins chez les Vegetaux, Colloques Internationaux du Centre National de la Recherche Scientifiques no. 261*, pages 395–401. Editions du Centre National de la Recherche Scientifique, 15 quai Anatole-France, 75700 Paris, France, 1977.
- Margulies, M. M., and J. Weistrop. "A Chloroplast Membrane Fraction Enriched in Chloroplast Ribosomes." In *Genetics and Biogenesis of Chloroplast and Mitochondria*, edited by Th. Bucher et al., pages 657–660. Amsterdam, The Netherlands: Elsevier/North Holland Biomedical Press, 1976.
- Stuckenrath, R. "Radiocarbon: Some Notes from Merlin's Diary." In *Americans and Their Paleoenvironments in Northeastern North America, Annals of the N. Y. Academy of Sciences*, edited by W. S. Newman and B. Salwen, volume 288, pages 181–188. The New York Academy of Sciences, 1977.
- Suraqui, S., B. Goldberg, and W. H. Klein. "An Analysis of the Errors Found in Broadband Filter Radiometry." *Solar Energy*, volume 19 (1977), pages 123–127.

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

(Including Contributions from Harvard Members of the Center for Astrophysics)

- Akram, F., N. M. Sheikh, A. Javed, and M. D. Grossi. "Impulse Response of a Meteor Trail Forward Scattering Channel Determined by Ray Tracing Techniques." *Institute of Electrical and Electronic Engineers, Transactions of the Communications Society*, volume COM-25, pages 467–470, 1977.
- Aksnes, K. "The Natural Satellites: Beacons in the Sky." *Harvard Magazine*, July/August 1977, pages 28–33.
- Aksnes, K., A. F. Cook, F. A. Franklin, and B. G. Marsden. [Letter to the editor] "Saturn's Disputed Moons." *Science News*, volume 11 (1977), page 115.
- Allen, R. S., D. D. Dulong, M. D. Grossi, and A. H. Katz. "Ionospheric Range Error Correction by Adaptive Probing of Propagation Medium." In *Proceedings of the NATO-AGARD Conference on Propagation Limitations of Navigation and Positioning Systems*, AGARD Publication Number 209, pages 6-1–6-16. Neuilly-sur-Seine, France, 1976.
- Altschuler, M.D., R. H. Levine, M. Stix, and J. W. Harvey. "High Resolution Mapping of the Magnetic field of the Solar Corona." *Solar Physics*, volume 51 (1977), pages 345–375.
- Avrett, E. H. "Models of the Solar Atmosphere." In *The Solar Output and Its Variations*, edited by O. R. White, J. A. Eddy, and D. F. Heath. Boulder, Colorado: University of Colorado Press, 1977.

- Avrett, E. H., J. E. Vernazza, and J. L. Linsky. [Abstract] "Formation of the He I and He II Lines in the Solar Atmosphere." *Bulletin of the American Astronomical Society*, volume 8 (1976), page 534.
- Ayres, T. R. "A Reexamination of Solar Upper Photosphere Models, the Calcium Abundance, and Empirical Damping Parameters." *Astrophysical Journal*, volume 213 (1977), pages 296-306.
- . "Nonthermal Broadening in the Solar Photosphere Derived from Widths of Weak Absorption Features in the Ca II H and K Wings." *Astrophysical Journal*, volume 214 (1977), pages 905-911.
- Ayres, T. R., and H. R. Johnson. "The Surface Gravity and Mass of Arcturus." *Astrophysical Journal*, volume 214 (1977), pages 410-417.
- Ayres, T., J. Linsky, A. Rogers, and R. Kurucz. "Stellar Model Chromospheres. V. α Cen A (G2V) and α Cen B (KIV)." *Astrophysical Journal*, volume 210 (1977), pages 199-210.
- Baliunas, S. L., A. K. Dupree, and J. D. Lester. [Abstract] "Possible Detection of Fe XIV in the X-Ray Binary." *Bulletin of the American Astronomical Society*, volume 9 (1977), page 298.
- Bardas, D. "A Moderate-Resolution, Wideband, Astronomical Echelle Spectrograph." *Publications of the Astronomical Society of the Pacific*, volume 89 (1977), pages 104-111.
- Bardas, D., J. E. McClintock, P. Peterson, G. W. Clark, and C. R. Canizares. [Abstract] "Two Dimensional Photon-Counting Echelle Spectroscopy." *Bulletin of the American Astronomical Society*, volume 8 (1976), page 290.
- Black, J. H., and A. Dalgarno. "Molecule Formation in the Interstellar Gas." *Reports on Progress in Physics, Institute of Physics*, volume 39 (1976), pages 573-612.
- . "Models of Interstellar Clouds. I. The Zeta Ophiuchi Cloud." *Astrophysical Journal Supplement Series*, volume 34, number 3 (1977), pages 405-423.
- Bottcher, C., A. L. Ford, and K. Kirby-Docken. "Evaluation of Molecular Integrals Involving Continuum Orbitals." *Computational Physics Communications*, volume 13 (1977), pages 11-15.
- Blair, G. N., and D. F. Dickinson. "SiO Masers in Variable Stars." *Astrophysical Journal*, volume 215 (1977), pages 552-560.
- Brace, L. H., W. R. Hoegy, H. G. Mayr, G. A. Victor, W. B. Hanson, C. A. Reber, and H. E. Hinteregger. "Discrepancy between Electron Heating and Cooling Rates Derived from Atmospheric Explorer-C Measurements." *Journal of Geophysical Research*, volume 81 (1976), pages 5421-5429.
- Brinkman, A. C., J. Heise, A. J. F. denBoggende, J. Grindlay, H. Gursky, and D. Parsignault. "X-Ray Observations of Cygnus A with ANS." *Astrophysical Journal*, volume 214 (1977), pages 35-37.
- Cameron, A. G. W., and J. B. Pollack. "On the Origin of the Solar System and of Jupiter and Its Satellites." In *Jupiter*, edited by T. Gehrels and M. S. Matthews, pages 61-84. Tucson, Arizona: University of Arizona Press, 1976.
- Cameron, A. G. W., and J. W. Truran. "The Supernova Trigger for Formation of the Solar System." *Icarus*, volume 30 (1977), pages 447-461.
- Cantu, A. M., W. H. Parkinson, G. Tindello, and G. P. Tozzi. "Observations of Li I and Li II Absorption Spectra in the Grazing Incidence Region." *Journal of the Optical Society of America*, volume 67 (1977), page 1030.
- Carleton, N. P., and J. M. Vrtilik. [Abstract] "A Search for Emission Lines from Hot Interstellar Gas." *Bulletin of the American Astronomical Society*, volume 8 (1977), page 499.
- Cassinelli, J. P., and L. W. Hartmann. "The Effects of Winds and Coronae of Hot Stars on the Infrared and Radio Continua." *Astrophysical Journal*, volume 212 (1977), page 488.

- Cepelcha, Z., and R. E. McCrosky. "Fireball End Heights: A Diagnostic for the Structure of Meteoric Material." *Journal of Geophysical Research*, volume 81 (1976), pages 6257–6275.
- Chaffee, F. H., Jr. [Abstract] "Weak Interstellar Lines toward Persei." *Bulletin of the American Astronomical Society*, volume 8 (1977), page 66.
- Chaffee, F. H., Jr., and B. L. Lutz. "Line Spectra in Interstellar Clouds. III. Weak Lines below $\lambda 3400$ in ζ Perseii." *Astrophysical Journal*, volume 213 (1977), pages 394–404.
- Chaisson, E. J., and M. A. Dopita. "A Comparison of the Orion Nebula's Physical Condition Measured in the Radio and Optical Domains." *Astronomy and Astrophysics*, volume 56 (1977), pages 385–400.
- Chairsson, E. J., and M. A. Malkan. "Radio Recombination Study of the Planetary Nebula." *Astrophysical Journal*, volume 210 (1976), pages 108–112.
- Chaisson, E. J., and L. F. Rodriguez. "Detection of Extragalactic Radio Recombination Line Emission from M82." *Astrophysical Journal (Letters)*, volume 214 (1977), pages L111–L114.
- Cominsky, L., W. Forman, C. Jones, and H. Tananbaum. "UHURU Observations of the Globular Cluster X-Ray Source NGC 6712." *Astrophysical Journal (Letters)*, volume 211 (1977), pages L9–L14.
- Cowan, J. J., and W. K. Rose. "Production of ^{14}C and Neutrons in Red Giants." *Astrophysical Journal*, volume 212 (1977), page 149.
- Dalgarno, A. "The Interstellar Molecules CH and CH $^+$." In *Atomic Processes and Applications*, edited by P. G. Burke and B. L. Moiseiwitsch, pages 109–132. Amsterdam: North-Holland Publishing Company, 1976.
- Davies, P. B., D. K. Russell, B. A. Thrush, and H. E. Radford. "Rotational and Hyperfine Parameters of NH $_2$ (X^2B_1) from LMR Spectra." *Chemical Physics Letters*, volume 42 (1976), page 35.
- . "Analysis of the Laser Magnetic Resonance Spectrum of NH $_2$ (X^2B_1)." In *Proceedings of the Royal Society*, volume A253, page 299. 1977.
- Davis, R. J. "Spectral Classification and U, B, V, H-beta Photometry." *Astrophysical Journal*, volume 213 (1977), pages 105–110.
- Davis, R. J., W. A. Deutschman, and R. E. Schild. "The Galactic Distribution of Interstellar Absorption as Determined from the Telescope Catalog of Ultraviolet Stellar Observations and a New Catalog of UVB, H-beta Photoelectric Observations." *Astrophysical Journal Supplement*, volume 30 (1976), pages 97–225.
- Delvaile, J. P. [Abstract] "The X-Ray Structure of NGC 5128." *Bulletin of the American Astronomical Society*, volume 9 (1977), page 323.
- Dickinson, D. F., and S. G. Kleinmann. "Shell Structure in Stellar Water Masers." *Astrophysical Journal (Letters)*, volume 214 (1977), page L135.
- Dickinson, D. F., G. Kojoian, C. R. Purton, R. A. Sramek, and H. M. Tovmassian. "Radio Spectra of Some Markarian Galaxies." *Astronomische Nachrichten Band 297*, volume H.6 (1976), page 283.
- Dupree, A. [Abstract] "Chromospheres and Coronas in Late Type Stars" (invited review). *Bulletin of the American Astronomical Society*, volume 8 (1976), page 353.
- . "Ultraviolet Observations from I. U. E." In *Workshop Papers for a Symposium on X-Ray Binaries*, NASA SP-389, edited by Y. Kondo and B. Boldt, page 747. Washington: National Aeronautics and Space Administration, 1976.
- Dupree, A. K., and S. L. Baliunas. [Abstract] "Interstellar Density of Deuterium and Hydrogen towards Alpha Aurigae" *Bulletin of the American Astronomical Society*, volume 8 (1976), page 551.

- Dupree, A. K., P. V. Foukal, and C. Jordan. "Plasma Diagnostic Techniques in the Ultraviolet: The C III Density Sensitive Lines in the Sun." *Astrophysical Journal*, volume 209 (1976), pages 621–632.
- Dupree, A. K., and J. B. Lester. "High Dispersion Observations of HD 153919 (3U 1700-37)." In *Workshop Papers for a Symposium on X-Ray Binaries*, NASA SP-389, edited by Y. Kondo and B. Boldt, pages 539–549. Washington: National Aeronautics and Space Administration, 1976.
- Elliot, J. L., E. Dunham, D. Mink, R. L. Millis, J. Churms, and B. G. Marsden. "Occultation of SAO 158687 by Uranian Satellite Belt." *International Astronomical Union Circular Number 3051*, 1977.
- Elmegreen, B. G., and C. J. Lada. "Discovery of an Extended (85 pc) Molecule Cloud Associated with the M17 Star-Forming Complex." *Astronomical Journal*, volume 81 (1976), page 1089.
- . "Sequential Formation of Subgroups in OB Associations." *Astrophysical Journal*, volume 214 (1977), page 725.
- Epstein, A., J. Delvaille, H. Helmken, S. Murray, H. W. Schnopper, R. Doxsey, and F. Primini. "Variability of LMC X-4." *Astrophysical Journal*, volume 216 (1977), pages 103–107.
- Epstein, R. I., and M. J. Geller. "A Model for Superlight Velocities of Extragalactic Radio Sources." *Nature*, volume 265 (1977), pages 219–222.
- Fabbiano, G., and E. J. Schreier. "Further Studies of the Pulsation Period and Orbital Elements of Centaurus X-3." *Astrophysical Journal*, volume 214 (1977), pages 235–244.
- Fazio, G. G., W. A. Traub, E. L. Wright, F. J. Low, and L. Trafton. "The Effective Temperature of Uranus." *Astrophysical Journal*, volume 209 (1976), pages 633–637.
- Field, G. B. "The Space Telescope." *Astronomy Magazine*, volume 4 (November 1976), page 6–15.
- Field, G. B., and S. C. Perrenod. "Constraints on a Dense Hot Intergalactic Medium." *Astrophysical Journal*, volume 215 (1977), pages 717–722.
- Fireman, E. L., J. DeFelice, and J. D'Amico. "The Abundances of ^3H and ^{14}C in the Solar Wind." *Earth and Planetary Science Letters*, volume 32 (1976), pages 185–190.
- . [Abstract] "Carbon-14 in Lunar Soil." In *Lunar Science VIII*, pages 299–301. Houston, Texas: Lunar Science Institute, 1977.
- Foukal, P. V. "The Pressure and Energy Balance of the Cool Corona over Sunspots." *Astrophysical Journal*, volume 210 (1976), pages 575–581.
- Foukal, P. V., P. E. Mack, and J. E. Vernazza. "The Effect of Sunspots and Faculae on the Solar Constant." *Astrophysical Journal*, volume 215 (1977), pages 952–959.
- Fox, J. L., and A. Dalgarno. "Radiative Transition Probabilities of the $1s2p^3\ ^2\text{P}$ and $1s2p^2\ ^2\text{D}$ States of the Lithium Isoelectronic Sequence." *Physical Review A*, volume 16 (1977), pages 283–288.
- Fox, J. L., A. Dalgarno, E. R. Constantinides, and G. A. Victor. "The Nitrogen Dayglow on Mars." *Journal of Geophysical Research*, volume 82 (1977), pages 1615–1616.
- Fox, J. L., A. Dalgarno, and G. A. Victor. "The Absorption of Energetic Electrons by Argon Gas." *Planetary and Space Science*, volume 25 (1977), pages 71–78.
- Frederick, J. E., D. W. Rusch, G. A. Victor, W. E. Sharp, D. G. Torr, P. B. Hays, and H. C. Brinton. "The OI ($\lambda 5577$) Å Airglow: Observations and Excitation Mechanisms." *Journal of Geophysical Research*, volume 81 (1976), pages 3923–3930.
- Gaposchkin, E. M. "Gravity-Field Determination Using Laser Observations." *Philosophical Transactions of the Royal Society (London)*, Series A, volume 284 (1977), pages 515–527.

- Gaposchkin, E. M., and G. M. Mendes. [Abstract] "Geopotential Model to Degree and Order 30 from Satellite and Terrestrial Data." *Transactions of the American Geophysical Union*, volume 58 (1977), page 371.
- Gingerich, O. [Omnibus review of a dozen current astronomy books] "Ad astra sine asperis." *Harvard Magazine*, volume 78 (1976), pages 58–59, and 61.
- . "Will the Universe End with a Bang or a Whimper?" *Harvard Magazine*, volume 79 (1977), pages 10–12.
- . "A Conversation with Charles Eames." *American Scholar*, volume 46 (1977), pages 326–337.
- . "The Trauma of the Infinite Universe." *Journal of the American Scientific Affiliation*, volume 29 (1977), pages 56–58.
- . "Donald Howard Menzel." *Physics Today*, volume 30 (1977), pages 96 and 98.
- . "The 1582 'Theorica Orbium' of Hieronymus Vulparis." *Journal of Historical Astronomy*, volume 8 (1977), pages 38–43.
- . "Tycho Brahe." *Harvard Magazine*, volume 79 (1977), pages 52–53 and 80.
- . [Abstract] "Was Ptolemy a Fraud?" *Bulletin of the American Astronomical Society*, volume 8 (1977), page 546.
- . "Copernicus: A Modern Reappraisal." In *Man's Place in the Universe, Riecker Lectures for 1973*, pages 25–49. Tucson Arizona: University of Arizona Press, 1977.
- . "Early Copernican Ephemerides." In *Science and History, Studies in Honor of Edward Rosen, Studia Copernicana*, volume 16. Wroclaw: Polska Akademia Nauk, 1977.
- , editor. *Cosmology +1*. San Francisco: W. H. Freeman, 1977.
- Gingerich, O., and B. Welther. "The Accuracy of the Toledan Tables." In *IPIΣMATA*, edited by W. G. Saltzer and Y. Maeyama, pages 151–164. Weisbaden: Steiner Verlag, 1977.
- Golub, L., A. S. Krieger, and G. S. Vaiana. "Observations of Spatial and Temporal Variations in X-Ray Bright Point Emergence Patterns." *Solar Physics*, volume 50 (1976), pages 311–327.
- Gorenstein, P., and K Topka. "Scintillating Imaging Proportional Counter as X-Ray to Light Image Converter." *Transactions on Nuclear Science*, volume NS-24, page 511. Institute of Electrical and Electronic Engineers, 1977.
- Gott, J. R., III, and E. L. Turner. "Groups of Galaxies. IV. The Multiplicity Function." *Astrophysical Journal*, volume 216 (1977), pages 357–371.
- Gottlieb, E. W., and W. Liller. "The Photometric Histories of CRL 2688, the 'Egg' nebula, and CRL 618." *Astrophysical Journal (Letters)*, volume 207 (1976), pages L135–L137.
- Gowen, R. A., B. A. Cooke, R. E. Griffiths, and M. J. Ricketts. "An Upper Limit to the Linear X-Ray Polarization of Sco X-1." *Monthly Notices of the Royal Astronomical Society*, volume 179 (1977), pages 303–310.
- Griffiths, R. E., M. J. Ricketts, and B. A. Cooke. "Observations of the X-Ray Nova A0620–00 with the Ariel V Crystal Spectrometer/Polarimeter." *Monthly Notices of the Royal Astronomical Society*, volume 177 (1976), pages 429–440.
- Grindlay, J. "Discovery of Bursting X-Ray Sources." *Comments on Astrophysics*, volume 6 (1976), pages 165–175.
- . "Very High Energy Gamma Ray Astronomy." In *The Structure and Content of the Galaxy and Galactic Gamma Rays*, edited by C. Fichtel and F. Stecher, pages 81–98. NASA publication CP-002, 1976.
- . [Abstract] "New ANS Results on Galactic X-Ray Sources." *Bulletin of the American Astronomical Society*, volume 8 (1976), page 444.
- . [Abstract] "ANS Observations of X-Ray Burst from the Globular

- Cluster NGC 662." *Bulletin of the American Physical Society*, volume 21 (1976), page 676.
- . "New Bursts in Astronomy." *Harvard Magazine*, volume 79 (1977), pages 23–27 and 81–82.
- Grindlay, J., and H. Gursky. "UHURU Observations of the Norma X-Ray Burster." *Astrophysical Journal (Letters)*, volume 209 (1976), pages L61–L64.
- Grindlay, J., H. Gursky, D. Parsignault, A. C. Brinkman, J. Heise, and D. Harris. "New X-Ray and Radio Observations of A 2319." *Astrophysical Journal (Letters)*, volume 214 (1977), pages L57–L60.
- Grindlay, J. E., H. Gursky, D. R. Parsignault, H. Cohn, J. Heise, and A. C. Brinkman. "X-Ray Observations of Globular Clusters with ANS." *Astrophysical Journal (Letters)*, volume 209 (1976), pages L67–L72.
- Grindlay, J., H. F. Helmken, and T. C. Weekes. "Evidence for a Variable Flux of $>10^{11}$ eV Gamma Rays from NP 0532." *Astrophysical Journal*, volume 209 (1976), pages 592–601.
- Grindlay, J., and W. Liller. [Abstract] "Evidence for Ionized Hydrogen in the Cores of X-Ray Globular Clusters." *Bulletin of the American Astronomical Society*, volume 8 (1976), page 544.
- Grindlay, J., D. R. Parsignault, H. Gursky, A. C. Brinkman, J. Heise, and D. E. Harris. "New X-Ray and Radio Observations of the Galaxy Cluster A 2319." *Astrophysical Journal (Letters)*, volume 214 (1977), page L57.
- Hall, R., T. Kelsall, D. E. Kleinmann, and G. Neugebauer. "The Infrared Capabilities of the Large Space Telescope." In *The Space Telescope*, NASA Special Publication Number 392, pages 90–96. Washington: National Aeronautics and Space Administration, 1976.
- Harnden, F., Jr., D. Fabricant, K. Topka, B. Flannery, W. Tucker, and P. Gorinstein. "A Soft X-Ray Image of the Algal Region." *Astrophysical Journal*, volume 214 (1977), pages 418–422.
- Helmken, H., and C. V. Karmendy. "Periodic Slot Collimator for Accurate Gamma Ray Burst Locations." *Space Science Instructor*, volume 3 (1977), pages 115–121.
- Hartmann, L. W., and C. M. Anderson. "Abundance in Late-Type Dwarfs." *Astrophysical Journal*, volume 215 (1977) page 188.
- . "Possible Infalling Gas in the DkSe Star EQ Virginis." *Astrophysical Journal (Letters)*, volume 213 (1977), page L67.
- Hartmann, L. W., and J. P. Cassinelli. "The Structure of the Winds of Wolf-Rayet Stars as Determined from Observations of the Infrared Continua." *Astrophysical Journal*, volume 215 (1977), page 155.
- Heise, J., A. C. Brinkman, A. J. F. den Boggende, D. R. Parsignault, J. Grindlay, and H. Gursky. "ANS Observations of the X-Ray Burster MXB 1730–335." *Nature*, volume 261 (1976), page 562–564.
- Henry, J. P., S. Bowyer, C. G. Rapley, and J. L. Culhane. "Detection of an Extreme-Ultraviolet Source in the Southern Sky." *Astrophysical Journal (Letters)*, volume 209 (1976), pages L29–L33.
- Henry, J. P., and E. J. Schreier. "A Measurement of the Spin-Up Rate of the SMC X-1 X-Ray Pulsar." *Astrophysical Journal (Letters)*, volume 212 (1977), pages L13–L16.
- Hogan, C., and D. Layzer. "Origin of the X-Ray Background." *Astrophysical Journal*, volume 212 (1977), pages 360–366.
- Jacchia, L. G. [Review] *Pulsating Stars*, edited by B. V. Kukarkin. *Sky and Telescope*, volume 57 (1976), pages 343–345.
- . [Review] *Atmosphere of Earth and the Planets*, edited by B. M. McCormack. *Space Science Review*, volume 19 (1976), page 161.

- . "Thermospheric Temperature, Density, and Composition: New Models." *Smithsonian Astrophysical Observatory Special Report Number 375*, 106 pages, 1977.
- Jacchia, L. G., J. W. Slowey, and U. vonZahn. "Temperature, Density, and Composition in the Disturbed Thermosphere from ESRO 4 Gas Analyzer Measurements." *Journal of Geophysical Research*, volume 82 (1976), pages 684–688.
- Johnson, W. R., C. D. Lin, and A. Dalgarno. "Allowed and Forbidden Transitions of Helium-Like Ions." *Journal of Physics B: Atomic and Molecular Physics*, volume 9 (1976), pages L303–L306.
- Jones, C. "Energy Spectra of 43 Galactic X-Ray Sources Observed by UHURU." *Astrophysical Journal*, volume 214 (1977), pages 856–873.
- Jones, C., and W. Forman. "UHURU Observations of Hercules X-1 during the Low State of the 35-Day Cycle." *Astrophysical Journal (Letters)*, volume 209 (1977), pages L131–L135.
- Jones, C., W. Forman, H. Tananbaum, and M. J. L. Turner. "UHURU and Ariel 5 Observations of 3U 1630–47: A Recurrent Transient X-Ray Source." *Astrophysical Journal (Letters)* volume 210 (1977), pages L9–L11.
- Jones, G. "Thermal Interaction of the Core and the Mantle and Core-Mantle Interaction." *Journal of Geophysical Research*, volume 82 (1977), pages 1703–1709.
- Julien, P., W. Forman, and C. Jones. [Abstract] "UHURU Observations of Cygnus X-3." *Bulletin of the American Astronomical Society*, volume 9 (1977), page 348.
- Kalkofen, W. "Line Radiation with Large Differential Velocities." In *Physique des Mouvements dans les Atmospheres Stellaires*, edited by R. Cayrel and M. Steinberg, page 95. Paris: Editions du CNRS, 1976.
- . [Abstract] "The Solar Temperature Minimum." *Bulletin of the American Astronomical Society*, volume 9 (1977), page 324.
- Kalkofen, W., and P. Ulmschneider. "Acoustic Waves in the Solar Atmosphere: II. Radiative Damping." *Astronomy and Astrophysics*, volume 57 (1977), pages 193–198.
- Källne, E., H. W. Schnopper, L. P. VanSpeybroeck, J. P. Delvaille, A. Epstein, R. Z. Bachrach, J. H. Dijkstra, and L. J. Lautwaard. [Abstract] "Holographic Transmission Gratings: A New Analyzer in the X-Ray Region." *International Conference on the Physics of X-Ray Spectra*, pages 245–247, 1976.
- Kellogg, E., S. Murray, U. Briel, and D. Bardas. "The Photicon." *Review of Scientific Instruments*, volume 48 (1977), pages 550–553.
- Kirby-Docken, K., and B. Liu. "Theoretical Study of Molecular Dipole Moment Functions. I. The $X^1\Sigma^+$ state of CO." *Journal of Chemical Physics*, volume 66 (1977), pages 4309–4316.
- Kleinmann, D. E. "Infrared Observations of Extragalactic Sources." In *Proceedings of COSPAR/IAU/URI Symposium on Infrared and Submillimeter Astronomy*, page 129. Dordrecht, Holland: D. Reidel Publishing Company, 1976.
- Kleinmann, D. E., S. G. Kleinmann, and E. L. Wright. "The Infrared Source near the Rapid Burst X-Ray Source MXB 1730-335." *Astrophysical Journal (Letters)*, volume 210 (1977), page L83.
- Kleinmann, S. G., and D. F. Dickinson. [Abstract] "The Structure of Circumstellar Maser Emission." *Bulletin of the American Astronomical Society*, volume 9 (1977), page 321.
- Kohl, J. L. "The Components of the Balmer Alpha Line of He II in the Sun." *Astrophysical Journal*, volume 212 (1977), page 958.

- Kohl, J. L., W. H. Parkinson, and G. L. Withbroe. "The Solar Boron Abundance." *Astrophysical Journal (Letters)*, volume 212 (1977), pages L101-L104.
- Kopp, J. P., D. W. Rusch, R. G. Roble, G. A. Victor, and P. B. Hays. "Photoemission in the Second Positive System of Molecular Nitrogen in the Earth's Dayglow." *Journal of Geophysical Research*, volume 82 (1977), pages 555-560.
- Krésak, L., B. G. Marsden, P. Herget, E. Roemer, and B. Morando. "Report of the International Astronomical Union Commission Number 20." *Transactions of the International Astronomical Union*, volume XVIIA (1976), pages 117-126.
- . "The Occultation of κ Geminorum by Eros: A Learning Experience." *Bulletin of the American Association of Variable Star Observers*, volume 4 (1976), page 34.
- Kurucz, R. "The Fourth Positive System of Carbon Monoxide." *Smithsonian Astrophysical Observatory Special Report Number 374*, 170 pages. 1977.
- Lada, C. J. "Detailed Observations of the M17 Molecular Cloud Complex." *Astrophysical Journal Supplement Series*, Number 32, page 603.
- Latham, D. W. [Abstract] "The Effects of Push Development and Hydrogen Hyper-Sensitization in the Detective Performance of Kodak Spectroscopic Plates Types IIIa-J and 127-04." *American Astronomical Society Photo Bulletin Number 3*, issue number 13 (1976), pages 9-13.
- Lathan, D. W., M. Davis, E. D. Feigelson, and J. B. Lester. [Abstract] "Grid Photography." *Bulletin of the American Astronomical Society*, volume 8 (1977), page 566.
- Latimer, J., and E. M. Gaposchkin. [Abstract] "Scalar Translocation Using Laser Ranging Data and Station-Coordinate Determination." *Transactions of the American Geophysical Union*, volume 58 (1977), page 372.
- Layzer, D. "Why Are Spherical Stellar Systems Relaxed?" *General Relativity and Gravitation*, volume 8, number 1 (1977), pages 3-6.
- . "The Structure of Matter and the Structure of the Astronomical Universe." *International Journal of Quantum Chemistry, Quantum Chemistry Symposium*, Number 11, pages 637-645, 1977.
- Levine, R. H. [Abstract] "Evolution of Photospheric Magnetic Field Patterns." *Bulletin of the American Astronomical Society*, volume 9 (1977), page 371.
- . [Invited review] "Large Scale Solar Magnetic Fields and Coronal Holes." In *Skylab Solar Workshop Series Monograph on Coronal Holes*, edited by J. B. Zirker, Chapter 4. Boulder, Colorado: Associated University Press, 1977.
- Levine, R. H., M. D. Altschuler, and J. W. Harvey. "Solar Sources of the Interplanetary Magnetic Field and Solar Wind." *Journal of Geophysical Research*, volume 82 (1977), 1061-1065.
- Levine, R. H., M. D. Altschuler, J. W. Harvey, and B. V. Jackson. "Open Magnetic Structures on the Sun." *Astrophysical Journal*, volume 215 (1977), pages 636-657.
- Levine, R. H., and J. C. Flagg. "Numerical Image Manipulation and Display in Solar Astronomy." *Applied Optics*, volume 16 (1977), pages 938-943.
- Levine, R. H., and G. L. Withbroe. "Physics of an Active Region Loop System." *Solar Physics*, volume 51 (1977), pages 83-101.
- Lightman, A. P. "Some Recent Advances in X-Ray Astronomy." *Sky and Telescope*, volume 52 (1976), page 243.
- . [Review] *The Dark Night Sky*, by Donald Clayton. *Icarus*, volume 30 (1977), page 436.
- . "Enhancement of the Gravo-thermal Catastrophe in Two-Component Isothermal Spheres." *Astrophysical Journal*, volume 215 (1977), pages 914-918.

- Lightman, A. P., and S. L. Shapiro. "The Distribution and Consumption Rate of Stars around a Massive Collapsed Object." *Astrophysical Journal*, volume 211 (1977), page 244.
- Liller, M. H., and B. W. Carney. [Abstract] "Revised Photometry and a New Distance for the Globular Cluster NGC 6624 = 3U 1820-30." *Bulletin of the American Astronomical Society*, volume 9 (1977), page 294.
- Liller, W. "A0620-00 as a Recurrent Nova." In *X-Ray Binaries*, NASA SP-389, pages 335-341. Washington: National Aeronautics and Space Administration, 1976.
- . "The Long Term Variability of HDE 226868 = Cygnus X-1." In *X-Ray Binaries*, NASA SP-389, pages 573-620. Washington: National Aeronautics and Space Administration, 1976.
- . "Variability of HZ Hercules during the Optical Offs." In *X-Ray Binaries*, NASA SP-389, pages 155-157. Washington: National Aeronautics and Space Administration, 1976.
- . "The Story of AM Hercules." *Sky and Telescope*, volume 53 (1977), pages 351-354.
- . "Searches for the Optical Counterparts of the X-Ray Burst Sources MXB 1728-34 and MXB 1730-33." *Astrophysical Journal (Letters)*, volume 213 (1977), pages L21-L23.
- Liu, C. D., W. R. Johnson, and A. Dalgarno. "Radiation Decays of the $n = 2$ States of He-Like Ions." *Physical Review A*, volume 15 (1977), pages 154-161.
- Loeser, R., and E. M. Gaposchkin. "The Second Law of Debugging." *Software*, volume 6 (1976), pages 577-578.
- Mahra, H. S., S. K., Gupta, and B. G. Marsden. "Occupation of SAO 158687 by Uranian Rings." *International Astronomical Union Circular Number 3061*, 1977.
- Marcus, P. S., and W. H. Press. "On Green's Functions for Small Disturbances of Plane Couette Flow." *Journal of Fluid Mechanics*, volume 79 (1977), pages 525-534.
- Margules, L., H. O. Halvorson, J. S. Lewis, and A. G. W. Cameron. "Limitations to Growth of Microorganisms on Uranus, Neptune, and Titan." *Icarus*, volume 30 (1977), page 793.
- Marsden, B. G. "Orbital Linkage of Comets of Intermediate Period." *Report of Accomplishments of Planetology Program, 1975-1976*. NASA TM X-3364, pages 31-33, 1976.
- . "Annual Report of the Central Bureau for Astronomical Telegrams" *International Astronomical Union Information Bulletin*, number 36 (1976), pages 34-35.
- . "Report of the Central Bureau for Astronomical Telegrams" (Commission Number 6). *Transactions of the International Astronomical Union*, volume 16, pages 195-196, 1976.
- . "Annual Report of the Central Bureau of Astronomical Telegrams." *International Astronomical Union Information Bulletin*, number 38 (1977), pages 5-7.
- . "Forest Ray Moulton." In *Dictionary of American Biography*, edited by J. Garraty, Supplement 5, pages 508-509. New York: Charles Scribner's Sons, 1977.
- . "Charles Dillon Perrine." In *Dictionary of American Biography*, edited by J. Garraty, Supplement 5, pages 540-541. New York: Charles Scribner's Sons, 1977.
- Marsden, B. G., and Z. Sekanina. "Orbit Determination of Nearly Parabolic Comets." *Report of Accomplishments of Planetology Program 1975-1976*. NASA TM X-3364, pages 34-36, 1976.

- Marvin, U. B. "Professionalism Among Women and Men in the Geosciences." *Journal of Geological Education*, volume 24 (1976), pages 169–170.
- . "A Unique Eucritic Gabbro from the Descartes Highlands." *Meteoritics*, volume 11 (1976), pages 329–330.
- . [Review] *Carbonaceous Meteorites*, by B. Nagy. *American Mineralogy*, volume 61 (1976), page 344.
- . *The Earth Sciences: 1956–1976*. An overview prepared at the request of the National Science Foundation, 82 pages, 1977.
- Mattison, E. M., R. F. C. Vessot, and M. W. Levine. "The TE₁₁₁-Mode Cavity: A New Small Hydrogen Maser Resonator." In *Proceedings of the Second Frequency Standards and Metrology Symposium*, pages 615–624. Boulder, Colorado: National Bureau of Standards, 1976.
- Maxson, C. W., and G. S. Vaiana. "Determination of Plasma Parameters from Soft X-Ray Images for Coronal Hole (Open Magnetic Field Configurations) and Coronal Large-Scale Structures (Extended Closed-Field Configurations)." *Astrophysical Journal*, volume 215 (1977), pages 919–941.
- McSween, H. Y., Jr. "Carbonaceous Chondrites of the Orans Type: A Metamorphic Sequence." *Geochimica et Cosmochimica Acta*, volume 41 (1977), pages 477–491.
- . "On the Nature and Origin of Isolated Olivine Grains in Carbonaceous Chondrites." *Geochimica et Cosmochimica Acta*, volume 41 (1977), pages 411–418.
- Mertz, L. "Positively Constrained Imagery for Rotation Collimators." *Astrophysics and Space Science*, volume 45 (1976), pages 383–389.
- . "A Wide-Angle Mach-Zehnder Interferometer for Monochromatically Selective Photography." *Applied Optics*, volume 16 (1977), pages 812–813.
- Michael, W. H., A. P. Mayo, W. T. Blackshear, R. H. Tolson, G. M. Kelly, J. P. Brenkle, D. L. Cain, G. Fjeldbo, D. N. Sweetnam, R. B. Goldstein, P. E. MacNeil, R. D. Reasenberg, I. I. Shapiro, T. I. S. Boak, M. D. Grossi, and C. H. Tang. "Mass Dynamics and Surface Properties: Determination from Viking Tracking Data." *Science*, volume 194 (1976), pages 1337–1339.
- Mohr, P. A. "Atmospheric Correction Problems in Ethiopian Geodimeter Surveys." In *Proceedings of the International Symposium on Terrestrial Electromagnetic Distance Measurements and Atmospheric Effects on Angular Measurements*, edited by I. D. Brook, volume 3, paper 2. Stockholm, 1977.
- . "1974 Ethiopian Rift Geodimeter Survey." *Smithsonian Astrophysical Observatory Special Report Number 376*, March 1977, 111 pages (plus appendices).
- . [Abstract] "Contemporary Strain Accumulation Patterns in the Ethiopian rift." *E \oplus S, Transactions of the American Geophysical Union*, volume 58 (1977), page 490.
- Mohr, P. A. [Report] *Rio Grande Rift Symposium, Albuquerque, New Mexico, May 20-21, 1976*. World Data Center A for Solid Earth Geophysics, Report SE-5, Geodynamic International-10, pages 54–56. Boulder, Colorado: U.S. Department of Commerce, 1977.
- Mohr, P. A., and C. A. Wood. "Volcano Spacing and Lithospheric Attenuation in the Eastern Rift of Africa." *Earth and Planetary Science Letters*, volume 33 (1976), pages 126–144.
- Moran, J. M., J. A. Ball, J. L. Yen, P. R. Schwartz, K. J. Johnston, and S. H. Knowles. "Very Long Baseline Interferometric Observations of OH Masers Associated with Infrared Stars." *Astrophysical Journal*, volume 211 (1977), page 160.
- Moran, J. M., B. F. Burke, R. C. Walker, A. D. Haschick, L. I. Matveyenko, L. R. Kogan, V. I. Kostenko, and I. G. Moiseyev. [Abstract] "VLBI Obser-

- vations of H₂O Masers in H II Regions with Submilliarcsecond Resolution." *Bulletin of the American Astronomical Society*, volume 8, (1976), page 564.
- Morton, D., H. Spinrad, G. Bruzval, and R. Kurucz. "Ultraviolet Spectra of Alpha Aquilae and Alpha Canis Minoris." *Astrophysical Journal*, volume 212 (1977), pages 438–445.
- Murdin, P., R. E. Griffiths, K. A. Pounds, M. G. Watson, and A. J. Longmore. "Optical Identification of the Transient X-Ray Source A 1524-61." *Monthly Notices of the Royal Astronomical Society*, volume 178 (1977), pages 27p–32p.
- Oppenheimer, M. "Isentropic Instabilities in the Interstellar Gas." *Astrophysical Journal*, volume 211 (1977), pages 400–403.
- Oppenheimer, M., and A. Dalgarno. "Associative Ionization and Interstellar TiO⁺ and TiO." *Astrophysical Journal*, volume 212 (1977), pages 683–684.
- Oppenheimer, M., A. Dalgarno, and H. C. Brinton. "Ion Chemistry of N₂⁺ and the Solar Ultraviolet Flux in the Thermosphere." *Journal of Geophysical Research*, volume 81 (1976), pages 3762–3766.
- . "Molecular Oxygen Abundances in the Thermosphere from the Chemistry of O₂⁺ Ion Based on Atmosphere Explorer-C Composition Measurements." *Journal of Geophysical Research*, volume 81 (1976), pages 4678–4684.
- Oppenheimer, M., A. Dalgarno, F. P. Trebino, L. H. Brace, H. C. Brinton, and J. H. Hoffman. "Daytime Chemistry of NO⁺ from Atmosphere Explorer-C Measurements." *Journal of Geophysical Research*, volume 82 (1977), pages 191–194.
- Pallavicini, R., S. Serio, and G. S. Vaiana. "A Survey of Soft X-Ray Limb Flare Images: The Relation between Their Structure in the Corona and Other Physical Parameters." *Astrophysical Journal*, volume 216 (1977), pages 108–122.
- Papaliolios, C., S. J. Freeman, and R. A. Holt. "Experimental Status of Hidden Variable Theories." In *Quantum Mechanics, Determinism, Causality, and Particles*, edited by M. Flato, Z. Marix, A. Milojevic, D. Sternheimer, and N. P. Vigiier. Dordrecht, Holland: D. Reidel Publishing Company, 1976.
- Parsignault, D. R., E. Schreier, J. Grindlay, and H. Gursky. "On the Stability of the Period of Cygnus X-3." *Astrophysical Journal (Letters)*, volume 209 (1976), pages L73–L75.
- Parsignault, D. R., E. Schrier, J. Grindlay, H. Schnopper, and H. Gursky. [Abstract] "Limitations on Models of Cygnus X-3 based on ANS Observations." *Bulletin of the American Astronomical Society*, volume 8 (1976), page 441.
- Payne-Gaposchkin, C. H. "Past and Future Novae." In *Novae-Related Stars*. New York: D. Reidel Publishing Company, 1977.
- Penfield, H., M. M. Litvak, A. E. Lilley, and C. A. Gottlieb. "Mesospheric Ozone Measured from Ground-Based Microwave Observations." *Journal of Geophysical Research*, volume 81 (1976), pages 6115–6120.
- Perrenod, S. C., G. A. Shields, and E. J. Chaisson. "Observation and Interpretation of Temperature Gradients in the Orion Nebula." *Astrophysical Journal*, volume 216 (1977), pages 427–432.
- Phaneuf, R. A., P. O. Taylor, and G. H. Dunn. "Absolute Cross Sections for Emission of 284.7 nm." *Physical Review A*, volume 14 (1976), page 2021; erratum, *Physical Review A*, volume 15 (1976), page 1812.
- Porter, N. A., T. Delaney, H. F. Helmken, and T. C. Weekes. "Observations of NP 0532 with a Wide Angle Atmospheric Cerenkov System." *Nuovo Cimento*, volume 32B (1976), page 514.
- Porter, N. A., and T. C. Weekes. "Optical Pulses from Primordial Black Hole Explosions." *Nature*, volume 267 (1977), pages 5000–5001.
- . An "Upper Limit to the Rate of Gamma Ray Bursts from Primordial

- Black Hole Explosions." *Astrophysical Journal*, volume 213 (1977), pages 224-226.
- Press, W. H. "A 'Foil' for Gravitational Clustering Investigations." *Astronomy and Astrophysics*, volume 48 (1976), page 149.
- . "Theoretical Maximum for Energy from Director and Diffuse Sunlight." *Nature*, volume 264 (1976), page 734.
- . "On Gravitational Radiation from Sources which Extend in Their Own Wave Zone." *Physical Review D*, volume 15 (1977), page 965.
- Press, W. H., and S. A. Teukolsky. "On Formation of Close Binaries by Two-Body Tidal Capture." *Astrophysical Journal*, volume 213 (1977), page 183.
- Purton, C. R., G. Kojoian, and D. F. Dickinson. "Markarian 421: A Lacertid." *Publications of the Astronomical Society of the Pacific*, volume 89 (1977), page 119.
- Radford, H. E., M. M. Litvak, C. A. Gottlieb, E. W. Gottlieb, S. K. Rosenthal, and A. E. Lilley. "Mesospheric Water Vapor Measured from Ground-Based Microwave Observations." *Journal of Geophysical Research*, volume 82 (1977), pages 472-478.
- Radford, H. E., F. R. Peterson, D. A. Jennings, and J. A. Mucha. "Heterodyne Measurements of Submillimeter Laser Spectrometer Frequencies." *Journal of Quantum Electronics*, volume QE-13, pages 92-94. Institute of Electrical and Electronic Engineers, 1977.
- Radford, H. E., and D. K. Russell. "Spectroscopic Detection of Methoxy (CH³O)." *Journal of Chemical Physics*, volume 66 (1977), pages 2222-2224.
- Reeves, E. M., J. G. Timothy, P. V. Foukal, M. C. E. Huber, R. W. Noyes, E. J. Schmahl, J. E. Vernazza, and G. L. Withbroe. "Initial Results from the EUV Spectrometer on ATM." In *Scientific Investigations on the Skylab Satellite*, edited by M. I. Kent, E. Stuhlinger, and S. Wu, pages 73-103. New York: American Institute of Aeronautics and Astronautics, 1976.
- Reeves, E. M., J. G. Timothy, M. C. E. Huber, and G. L. Withbroe. "Photometric Calibration of the EUV Spectroheliometer on ATM." *Applied Optics*, volume 16 (1977), pages 849-857.
- Reid, M. J., and D. F. Dickinson. "The Stellar Velocity of Long-Period Variables." *Astrophysical Journal*, volume 209 (1976), page 505.
- Rice, J. E., H. Helava, R. R. Parker, and H. W. Schnopper. "X-Ray Spectra from Alcator." *Bulletin of the American Physical Society*, volume 21 (1976), page 852.
- Richardson, S. [Abstract] "Cation Exchange Profiles as Guides to Relative Fracture Ages in Metamorphic Rocks." *Geological Society of America, Abstracts with Programs*, volume 8 (1976), page 1079.
- Richardson, S. A., and H. Y. McSween. [Abstract] "The matrix composition of carbonaceous chondrites." *Meteoritics*, volume 11 (1976), pages 355-356.
- Rosenberg, F. D., and A. M. Levine. [Abstract] "X-Ray Observations of Extragalactic Objects from SAS-3." *Bulletin of the American Astronomical Society*, volume 9 (1977), page 348.
- Rosner, R., and G. S. Vaiana. "Hydrostatic and Dynamic Models of Solar Coronal Holes." *Astrophysical Journal*, volume 216 (1977), pages 141-157.
- Roufousse, M. C., and E. M. Gaposchkin. [Abstract] "Worldwide Survey of the Correlation between Short-Wavelength Features of Topographic Heights and of Gravity Anomalies." *Transactions of the American Geophysical Union*, volume 57 (1976), page 1002.
- Rybicki, G. B. "Integrals of the Transfer Equation: I. Quadratic Integrals for Monochromatic Isotropic Scattering." *Astrophysical Journal*, volume 213 (1977), page 165-176.
- . "The Interpretation of Line Profiles." In *The Energy Balance and Hydrodynamics of the Solar Chromosphere and Corona*, edited by R. M. Bonnet and Ph. Delache. France: G. de Bussac, Clermont-Ferrand, 1977.

- Ryder, G. "Apollo 17 KREEPy Basalt: A Rock Type Intermediate between Mare and KREEP Basalts." *Earth and Planetary Science Letters*, volume 35 (1977), pages 1–13.
- Ryder, G., and J. F. Bower. "Poikilitic KREEP Impact Melts in the Apollo 14 White Rocks." In *Proceedings of the Seventh Lunar Science Conference*, *Geochimica et Cosmochimica Acta*, Supplement 7, volume 2, pages 1925–1948, 1976.
- . "Petrology." In *Interdisciplinary Studies by the Imbrium Consortium*, volume 2, pages 1–8, 13–18, 20–26, and 42–60, 1977.
- Ryder, G., and G. J. Taylor. "Did Mare-Type Volcanism Commence Early in Lunar History?" In *Proceedings of the Seventh Lunar Science Conference*, *Geochimica et Cosmochimica Acta*, Supplement 7, volume 2, pages 1741–1755, 1976.
- Ryder, G., and J. A. Wood. [Abstract] "Composition and Vertical Structure of the Lunar Crust." *Meteoritics*, volume 11 (1976), pages 356–357.
- . [Abstract] "Serenitatis and Imbrium Impact Melts: Implications for Lunar Crustal Composition and Stratigraphy." In *Lunar Science VIII*, pages 826–828. Houston, Texas: Lunar Science Institute, 1977.
- . [Abstract] "The Apollo 15 Green Clods and the Green Glass Enigma" In *Lunar Science VIII*, pages 1026–1028. Houston, Texas: Lunar Science Institute, 1977.
- Schild, R. E. "The Distance-Reddening Law for Nova Cygni (1975) = V1500 Cygni." *Astrophysical Journal (Letters)*, volume 209 (1976), pages L35–L36.
- . "The Interstellar Reddening Law." *Astronomical Journal*, volume 82 (1977), pages 337–344.
- Schnopper, H. W. [Abstract] "Extragalactic X-Ray Sources." *Bulletin of the American Astronomical Society*, volume 8 (1976), page 445.
- Schnopper, H. W., J. P. Delvaille, A. Epstein, H. Helmken, S. S. Murray, G. Clark, G. Jernigan, and R. Doxsey. "Detection of X-Rays from Algol (β Persei). *Astrophysical Journal (Letters)*, volume 210 (1976), pages L75–L77.
- Schnopper, H. W., J. P. Delvaille, A. Epstein, K. Kalata, and A. R. Sohval. "X-Ray Spectroscopy with the ANS and HEAO-B Satellites." *Space Science Instrumentation*, volume 2 (1976), pages 243–261.
- Schnopper, H. W., A. Epstein, J. P. Delvaille, W. Tucker, R. Doxsey, and G. Jernigan. "Detection of the X-Ray Emission from 3C120. *Astrophysical Journal (Letters)*, volume 215 (1977), pages L7–L11.
- Schnopper, H. W., L. P. VanSpeybroeck, J. P. Delvaille, A. Epstein, E. Källne, R. Z. Bachrach, J. Dijkstra, and L. Lantwaard. "Diffraction Grating Transmission Efficiencies for XUV and Soft X-Rays." *Applied Optics*, volume 16 (1977), pages 1088–1091.
- Sekanina, Z. "Dust Content and Particle Release Experiments." In *Proceedings of the Shuttle-Based Cometary Science Workshop*, edited by G. A. Gary and K. S. Clifton, pages 142–149. Huntsville, Alabama: Marshall Space Flight Center, 1976.
- . "Statistics of Anomalous Tails of Comets." *NASA TM X-3364*, pages 40–42, 1976.
- Shapiro, S. L., and A. P. Lightman. "The Distribution of Stars around a Massive Black Hole." *Nature*, volume 262 (1976), page 743.
- Smarr, L. [Abstract] "Gravitational Wave Generation Efficiency for Colliding Black Holes." *Bulletin of the American Astronomical Society*, volume 8 (1976), page 516.
- . "Gravitational Radiation from Distant Encounters and Head-on Collisions of Black Holes: The Zero-Frequency Limit." *Physical Review D*, volume 15 (1977), page 2069.
- Smith, P. L. "Absolute Oscillator Strengths for the Iron Group: A Correction to the Data of Warner and a Comment on Some of the Semiempirical

- Results of Kurucz and Peytremann." *Monthly Notices of the Royal Astronomical Society*, volume 177, pages 275–289.
- Spencer, J. H., K. H. Johnston, P. R. Schwartz, R. C. Walker, J. Moran, and M. J. Reid. [Abstract] "The Size and Position of the H₂O Sources Associated with IR Stars." *Bulletin of the American Astronomical Society*, volume 8 (1976), page 552.
- Stein, R. F., R. I. Klein, and W. Kalkofen. "Radiative Shock Dynamics." *International Astronomical Union Reports, Commission 12*, pages 49–54, 1976.
- Stewart, R. F., D. K. Watson, and A. Dalgarno. "Variational Time-Dependent Hartree-Fock Calculations. III. Potential Curves for Two-Electron Molecular Systems." *Journal of Chemical Physics*, volume 65 (1976), pages 2104–2111.
- Svestka, Z., C. V. Solodyna, R. Howard, and R. H. Levine. [Abstract] "Open magnetic fields in active regions." *Bulletin of the American Astronomical Society*, volume 9 (1977), page 344.
- Tananbaum, H., L. J. Chaisson, W. Forman, C. Jones, and T. A. Matilsky. "UHURU Observations of 4U 1608–52: The 'Steady' X-Ray Source Associated with the X-Ray Burst Source in Norma." *Astrophysical Journal (Letters)*, volume 209 (1976), pages L125–L130.
- Tang, C. H., P. F. Sforza, and M. D. Grossi. "Viking Mission Relay Link Measurement of Dielectric Properties of Martian Terrain." In *Proceedings of the Colloquium on Water in Planetary Regoliths*, pages 134–138. Hanover, New Hampshire: Dartmouth College, Department of Earth Sciences, and Army Cold Regions Research and Engineering Laboratory, 1976.
- Timothy, J. G. "Detection Efficiencies of Channel Electron Multipliers with MgF Photocathodes at XUV Wavelengths." *Applied Optics*, volume 15 (1976), page 1218.
- Torr, D. G., M. R. Torr, J. C. G. Walker, L. H. Brace, H. C. Brinton, W. B. Hanson, J. H. Hoffman, A. O. Nier, and M. Oppenheimer. "Recombination of NO⁺ in the Ionosphere." *Geophysical Research Letters*, volume 3 (1976), pages 209–212.
- Tucker, W. H. [Abstract] "X-Ray Emission from Giant Elliptical Galaxies." *Bulletin of the American Astronomical Society*, volume 9 (1977), page 347.
- Turner, J. L., and A. Dalgarno. "The Chemistry of Silicon in Interstellar Clouds." *Astrophysical Journal*, volume 213 (1977), pages 386–389.
- Ulmschneider, P., and W. Kalkofen. "Theoretical Temperature Minimum for the Sun." In *Physique des Mouvements dans les Atmospheres Stellaires*, edited by R. Cayrel and M. Steinberg, page 103. Paris, France: CNRS, 1976.
- . "Acoustic Waves in the Solar Atmosphere: III. A Theoretical Temperature Minimum." *Astronomy and Astrophysics*, volume 57 (1977), pages 199–209.
- Ulmschneider, P., W. Kalkofen, T. Nowak, and H. U. Bohn. "Acoustic Waves in the Solar Atmosphere: I. The Hydrodynamic Code." *Astronomy and Astrophysics*, volume 54 (1977), page 61.
- Vaiana, G. S., L. VanSpeybroeck, M. V. Zombeck, A. S. Krieger, J. K. Silk, and A. Timothy. "The S-054 X-Ray Telescope Experiment on Skylab." *Space Science Instrumentation*, volume 3 (1977), pages 19–76.
- Vessot, R. F. C., and M. W. Levine. "A Preliminary Report on the Gravitational Redshift Rocket-Probe Experiment." In *Proceedings of the Second Frequency Standards and Metrology Symposium*, pages 659–688. Boulder, Colorado: National Bureau of Standards, 1976.
- Walborn, N. R., and M. H. Liller. "The Earliest Spectroscopic Observations of Eta Carinae and its Interaction with the Carina Nebula." *Astrophysical Journal*, volume 211 (1977), pages 181–183.
- Walker, R. C., B. F. Burke, A. D. Haschick, P. C. Crane, J. M. Moran, K. J.

- Johnston, K. Y. Lo, J. L. Yen, N. W. Broten, T. H. Legg, E. W. Greisen, and S. S. Hansen. [Abstract] "VLBI Aperture Synthesis Observations of H₂O Masers in H II Regions." *Bulletin of the American Astronomical Society*, volume 8 (1976), page 563.
- Watson, M. G., and R. E. Griffiths. "Ariel V Sky Survey Instrument: Extended Observations of 3U0900-40." *Monthly Notices of the Royal Astronomical Society*, volume 178 (1977), pages 513-524.
- Wayne, F. D., and H. E. Radford. "The Laser Magnetic Resonance Spectrum of Imine (NH) and Its Isotopes." *Molecular Physics*, volume 32 (1976), page 1407.
- Weekes, T. C. "The Sensitivity of Atmospheric Cherenkov Experiments for Gamma Ray Astronomy." *Nuovo Cimento*, volume 35 (1976), pages 95-109.
- . "Atmospheric Fluorescence as a Means of Detecting X-Ray and Gamma Ray Transients." *Journal of Atmospheric and Terrestrial Physics*, volume 38 (1976), pages 1021-1026.
- Whipple, F. L. "A Speculation about Comets and the Earth." *Mémoires de la Société Royale des Sciences, Liège, series 6*, volume 9 (1976), pages 101-111.
- . "Sources of Interplanetary Dust." In *Interplanetary Dust and Zodiacal Light*, edited by H. Elsässer and H. Fechtig, pages 403-415. Heidelberg: Springer-Verlag, 1976.
- . "Background of Modern Comet Theory." *Nature*, volume 263 (1976), pages 15-19.
- . "The Status of Cometary Science." In *Proceedings of the Shuttle-Based Cometary Workshop*, edited by G. A. Gary and K. S. Clifton, pages 169-190. Huntsville, Alabama: NASA/Marshall Space Flight Center, 1977.
- . "The reality of Comet Groups and Pairs." *Icarus*, volume 30 (1977), page 736.
- Whipple, F. L., and W. F. Heubner. "Physical Processes in Comets." *Annual Review of Astronomy and Astrophysics*, volume 14 (1976), pages 143-172.
- Whitney, C. A., and C. H. Payne-Gaposchkin. "Photometry of Long-Period Variables." *Mémoires de la Société Royale des Sciences, Liège, series 6*, volume 9 (1976), pages 419-435.
- Withbroe, G. L. "Mass and Energy Flow in the Solar Atmosphere—Implications of Skylab Observations." In *The Energy Balance and Hydrodynamics of the Solar Chromosphere and Corona*, edited by R. M. Bonnet and P. Delache, pages 263-315. France: G. de Bussac, Clermont-Ferrand, 1977.
- Withbroe, G. L., and J. T. Mariska. "Analysis of EUV Limb Brightening Observations from ATM. II. Influence of Spicules." *Solar Physics*, volume 48 (1976), pages 21-40.
- Withbroe, G. L., and J. E. Vernazza. "Active Region Flare Rates 8.6 mm Brightness Temperatures." *Solar Physics*, volume 50 (1976), pages 127-131.
- . [Abstract] "Skylab EUV Observations of the 7 September 1973 Flare." *Bulletin of the American Astronomical Society*, volume 9 (1977), page 299.
- Wood, J. A. "Basaltic Volcanism in Terrestrial Planets." *Geotimes*, February 1977, pages 26-29.
- Wright, E. L., E. W. Gottlieb, W. Liller, J. Grindlay, H. Schnopper, E. Schreier, H. Gursky, and D. Parsignault. [Abstract] "Possible Period for Cyg X-2 Based on Optical, X-Ray Data." *Bulletin of the American Astronomical Society*, volume 8 (1976), page 441.
- Wright, E. L., C. J. Lada, D. E. Kleinmann, and G. G. Fazio. "A New Infrared CO-Source in M8." *Astronomical Journal*, volume 82 (1977), pages 132-136.

SMITHSONIAN OCEANOGRAPHIC SORTING CENTER

- Ferrari, Frank. "The Significance of the Response of Pelagic Marine Animals to Solar Eclipses." *Deep-Sea Research*, number 23 (1976), pages 653-654.
- . "A Redescription of *Oithona dissimilis* Lindberg 1940 with a Comparison to *Oithona hebes* Giesbrecht 1891 (Crustacea: Copepoda: Cyclopoida)." In *Proceedings of the Biological Society of Washington*, volume 90, number 2, pages 400-411. 1977.
- Higgins, R. P. "Redescription of *Echinoderes dujardinii* (Kinorhyncha) with Descriptions of Closely Related Species." *Smithsonian Contributions to Zoology*, number 248, 1977.
- . "Two New Species of *Echinoderes* (Kinorhyncha) from South Carolina." *Transactions of the American Microscopical Society*, volume 96, number 3, pages 340-354. 1977.
- Landrum, B. J. "Cooperative Systematic Studies." *Antarctic Journal of the United States*, volume 11, number 3 (1976), page 192.
- . "Polar Biological Collections." *Antarctic Journal of the United States*, volume 11, number 4 (1976), page 292.
- Matthews, Frances D., David M. Damkeer, Leslie W. Knapp, and Bruce B. Collette. "Food of Western North Atlantic Tunas (*Thunnus*) and Lancetfishes (*Alepisaurus*)." *National Oceanic and Atmospheric Administration*, Technical Report NMFS SSRF-706, pages 1-19. 1977.

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

- Abele, Lawrence G. "Comparative Species Composition and Relative Abundance of Decapod Crustaceans in Marine Habitats of Panama." *Marine Biology*, volume 38, number 3 (1976), pages 263-278.
- Abrams, Peter A. "Density-Independent Mortality and Interspecific Competition: A Test of Pianka's Niche Overlap Hypothesis." *The American Naturalist*, volume 111, number 979 (1977), pages 539-552.
- Bartholomew, George A., and Timothy M. Casey. "Endothermy During Terrestrial Activity in Large Beetles." *Science*, volume 195, number 4281 (1977), pages 882-883.
- Batista de Yee, Gloria, and Carmen Rosa Chang. "Observaciones Sobre la Ecología de una Pradera de *Thalassia* en la Costa Atlántica de Panamá." Thesis, Universidad de Panamá, República de Panamá, 1976.
- Bertsch, Hans. "Intraspecific and Ontogenetic Radular Variation in Opisthobranch Systematics (Mollusca: Gastropoda)." *Systematic Zoology*, volume 25, number 2 (1976), pages 117-122.
- Bonaccorso, Frank J., Nicholas Smythe, and Stephen R. Humphrey. "Improved Techniques for Marking Bats." *Journal of Mammalogy*, volume 57, number 2 (1976), pages 181-182.
- Burghardt, Gordon M. "Of Iguanas and Dinosaurs: Social Behavior and Communication in Neonate Reptiles." *American Zoologist*, volume 17, number 1 (1977), pages 177-190.
- Burghardt, Gordon M., Harry W. Green, and A. Stanley Rand. "Social Behavior in Hatchling Green Iguanas: Life at a Reptile Rookery." *Science*, volume 195, number 4279 (1977), pages 689-691.
- Clark, Mertice M., and Bennett G. Galef, Jr. "Patterns of Agonistic Interaction and Space Utilization by Agoutis (*Dasyprocta punctata*)." *Behavioral Biology*, volume 20, number 1 (1977), pages 135-140.
- Cooke, Richard G. "Current Research: Lower Central America." *American Antiquity*, volume 42, number 2 (1977), pages 281-283.
- . "Nuevos Análisis de Carbono-14 para Panamá, al Este de Chiriquí: una Actualización de los Cambios Culturales Prehistóricos." *La Antigua*, number 6 (1976), pages 88-111.

- . "Panamá: Región Central." *Vínculos*, volume 2, number 1 (1976), pages 122–140.
- Del Rosario, Juan B., and Lawrence G. Abele. "Descriptions of the Male and New Distribution Records for *Acanthocarpus delsolari* Garth, 1973 (Decapoda, Calappidae) from the Pacific Coast of Panama." *Crustaceana*, volume 30, number 3 (1976), pages 225–228.
- Dexter, Deborah M. "A Natural History of the Sand Dollar *Encope stokesi* L. Agassiz in Panama." *Bulletin of Marine Science*, volume 27, number 3 (1977), pages 544–551.
- Dressler, Robert L. "Une *Epidendrum* Bella del Subgénero *Oerstedella*. An Attractive *Epidendrum* of the Subgenus *Oerstedella*." *Orquideología*, volume 11, number 2 (1976), pages 107–112.
- . "How to Study Orchid Pollination Without Any Orchids." In *Proceedings of the Eighth World Orchid Conference*, pages 534–537. 1976.
- . "Orquídeas Colectadas en Fortuna, 1976." In *Evaluation Ambiental y Efectos del Proyecto Hidroelectrico Fortuna*, by Abdiel J. Adames. Loteria, number 254–256 (1977), pages 209–216.
- . "Una *Poinsettia* (Euphorbiaceae) Nueva y Atractiva de Guerrero (Mexico)." *Boletín de la Sociedad Botánica de Mexico*, number 35 (1975), pages 17–21.
- . "Una *Sievekingia* Nueva de Colombia. A New Colombian *Sievekingia*." *Orquideología*, volume 11, number 3 (1976), pages 215–221.
- . "Tipificación de *Epidendrum insidiosum*. The Typification of *Epidendrum insidiosum*." *Orquídea* (Mex.), volume 61, number 1 (1976), pages 8–11.
- Dressler, Robert L., and Eric Hagsater. "Una Especie Nueva del Sur de Mexico, *Helleriella guerrerensis*." *Orquídea* (Mex.), volume 5, number 2 (1975), pages 35–42.
- . "*Pachyphyllum mexicanum*, sp. nov.; Un Género Nuevo Para la Orquideoflora de Mexico. *Pachyphyllum mexicanum*, sp. nov.; A New Genus for the Mexica Orchid Flora." *Orquídea* (Mex.), volume 6, number 3 (1976), pages 71–79.
- Dressler, Robert L., and Norris H. Williams. "Euglossine Pollination of *Spathiphyllum* (Araceae)." *Selbyana*, volume 1 (1976), pages 349–356.
- Eberhard, William G. "Physical Properties of Sticky Spirals and Their Connections: Sliding Connections in Orb Webs." *Journal of Natural History*, volume 10, number 5 (1976), pages 481–488.
- Fauchald, Kristian. "Polychaetes From Intertidal Areas in Panama, with a Review of Previous Shallow-Water Records." *Smithsonian Contributions to Zoology*, number 221, 1977.
- Foster, Robin B. "*Tachigalia versicolor* is a Suicidal Neotropical Tree." *Nature*, volume 268, number 5621 (1977), pages 624–626.
- Galef, Bennett G., Jr., and Mertice M. Clark. "Non-Norturent Functions of Mother-Young Interaction in the Agouti (*Dasyprocta punctata*)." *Behavioral Biology*, volume 17, number 2 (1976), pages 255–262.
- Galef, Bennett G., Jr., Russell A. Mittermeier, and Robert C. Bailey. "Predation of the Tayra (*Eira barbara*)." *Journal of Mammalogy*, volume 57, number 4 (1976), pages 760–761.
- Gee, John H. "Buoyancy and Aerial Respiration: Factors Influencing the Evolution of Reduced Swimbladder Volume of Some Central American Catfishes (Trichomycteridae, Callichthyidae, Loricariidae, Astroblepidae)." *Canadian Journal of Zoology*, volume 54, number 7 (1976), pages 1030–1037.
- Gee, John H., and Phyllis A. Gee. "Alteration of Buoyancy by Some Central American Stream Fishes, and a Comparison with North American Species." *Canadian Journal of Zoology*, volume 54, number 3 (1976), pages 386–391.
- Gliwicz, Zbgniew Maciej. "Plankton Photosynthetic Activity and Its Regula-

- tion in Two Neotropical Man-Made Lakes." *Polish Archives of Hydrobiology*, volume 23, number 2 (1976), pages 61–93.
- . "Stratification of Kinetic Origin and its Biological Consequences in a Neotropical Man-Made Lake." *Ekologia Polska*, volume 24, number 2 (1976), pages 197–209.
- Glynn, Peter W. "Some Physical and Biological Determinants of Coral Community Structure in the Eastern Pacific." *Ecological Monographs*, volume 46, number 4 (1976), pages 431–456.
- . "Interactions Between *Acanthaster* and *Hymenocera* in the Field and Laboratory." In *Proceedings of the Third International Coral Reef Symposium, I*, pages 209–215. 1977.
- . "Growth Rate and Age of Coral Reefs on the Pacific Coast of Panama." In *Proceedings of the Third International Coral Reef Symposium, II*, pages 251–259. 1977.
- Gore, Robert H., and Lawrence G. Abele. "Shallow Water Porcelain Crabs of Panama and Adjacent Caribbean Waters (Crustacea: Anomura: Porcellanidae)." *Smithsonian Contributions to Zoology*, number 237, 1976.
- Green, Harry W. "The Aardwolf as Hyena Mimic." *Animal Behaviour*, volume 25, number 1 (1977), pages 245–246.
- Haines, Bruce, and Robin B. Foster. "Energy Flow Through Litter in a Panamanian Forest." *Journal of Ecology*, volume 65, number 1 (1977), pages 147–155.
- Healey, Thomas S. "Where Seaworms Glow and Monkeys Howl in the Tree-tops." *The Lamp*, Spring 1977, pages 26–29.
- Heck, Kenneth L., Jr. "Comparative Species Richness, Composition, and Abundance of Invertebrates in Caribbean Seagrass (*Thalassia testudinum*) Meadows (Panama)." *Marine Biology*, volume 41, number 4 (1977), pages 335–348.
- Hendler, Gordon. "Development of *Amphioplus abditus* (Verrill) (Echinodermata: Ophiuroidea): I. Larval Biology." *Biological Bulletin*, volume 152, number 1 (1977), pages 51–63.
- . "The Differential Effects of Seasonal Stress and Predation on the Stability of Reef-Flat Echinoid Populations." In *Proceedings of the Third International Coral Reef Symposium, I*, pages 217–224. 1977.
- Heyer, W. Ronald, and A. Stanley Rand. "Foam Nest Construction in the Leptodactylid Frogs *Leptodactylus pentadactylus* and *Physalaemus pustulosus* (Amphibia, Anura, Leptodactylidae)." *Journal of Herpetology*, volume 11, number 2 (1977), pages 225–228.
- Hover, Edward L., and Thomas A. Jenssen. "Descriptive Analysis and Social Correlates of Agonistic Displays of *Anolis limifrons* (Sauria, Iguanidae)." *Behaviour*, volume 58, number 3–4 (1976), pages 173–191.
- Jaeger, Robert G. "A Possible Prey-Call Window in Anuran Auditory Perception." *Copeia*, number 4 (1976), pages 833–834.
- Jaeger, Robert G., Jack P. Hailman, and Linda S. Jaeger. "Bimodal Diel Activity of Panamanian Dendrobatid Frog, *Colostethus nubicola*, in Relation to Light." *Herpetologica*, volume 32, number 1 (1976), pages 77–81.
- Janos, David P. "Vesicular-Arbuscular Mycorrhizae Affect the Growth of *Bactris gasipaes*." *Principes*, volume 21, number 1 (1977), pages 12–18.
- Jenssen, Thomas A., and Edward L. Hover. "Display Analysis of the Signature Display *Anolis limifrons* (Sauria: Iguanidae)." *Behaviour*, volume 57, number 3–4 (1976), pages 227–240.
- Karr, James R. "An Association Between a Grass (*Paspalum virgatum*) and Moths." *Biotropica*, volume 8, number 4 (1976), pages 284–285.
- . "On the Relative Abundance of Migrants from the North Temperate Zone in Tropical Habitats." *Wilson Bulletin*, volume 88, number 3 (1976), pages 433–458.

- . "Seasonality, Resource Availability, and Community Diversity in Tropical Bird Communities." *The American Naturalist*, volume 110, number 976 (1976), pages 973–994.
- . "Weights of African Birds." *Bulletin of the British Ornithological Club*, volume 96, number 3 (1976), pages 92–96.
- . "Within- and Between-Habitat Avian Diversity in African and Neotropical Lowland Habitats." *Ecological Monographs*, volume 46, number 4 (1976), pages 457–481.
- . "Ecological Correlates of Rarity in a Tropical Forest Bird Community." *The Auk*, volume 94, number 2 (1977), pages 240–247.
- Kramer, Donald L., and Jeffrey B. Graham. "Synchronous Air Breathing, a Social Component of Respiration in Fishes." *Copeia*, number 4 (1976), pages 689–697.
- Lawrence, J. M. "On the Role of the Tube Feet and Spines in the Righting Response of Sea Urchins (Echinodermata: Echinoidea)." *American Zoologist*, volume 16, number 2 (1976), page 228.
- Leigh, Egbert G., Eric L. Charnov, and Robert R. Warner. "Sex Ratio, Sex Change, and Natural Selection." In *Proceedings of the National Academy of Sciences of the United States of America*, volume 73, number 10, pages 3656–3660. 1976.
- Linares, Olga F. "Animals That Were Bad to Eat Were Good to Compete With: An Analysis of the Conte Style from Ancient Panama." In *Ritual and Symbol in Native Central America*, edited by Philip Young and James Howe. *University of Oregon, Anthropological Papers*, number 9 (1976), pages 3–19.
- . "Current Research: Central America." *American Antiquity*, volume 41, number 2 (1976), pages 225–226.
- . "'Garden Hunting' in the American Tropics." *Human Ecology*, volume 4, number 4 (1976), pages 331–349.
- . [Review] *The Yukpa Cultivation System: A Study of Shifting Cultivation in Colombia and Venezuela*, by Kenneth Rudle. *Human Ecology*, volume 4, number 3 (1976), pages 273–275.
- . "Adaptive Strategies in Western Panama." *World Archeology*, volume 8, number 3 (1977), pages 304–319.
- Lubin, Yael D.; G. Gene Montgomery, and Orrey P. Young. "Food Resources of Anteaters (Edentata: Myrmecophagidae) I. A Year's Census of Arboreal Nests of Ants and Termites on Barro Colorado Island, Panama Canal Zone." *Biotropica*, volume 9, number 1 (1977), pages 26–34.
- McCosker, John E. "The Osteology, Classification, and Relationships of the Eel Family Ophichthidae." In *Proceedings of the California Academy of Sciences*, volume 41, number 1, pages 1–123. 1977.
- McCoy, Earl D., and Kenneth L. Heck. "Biogeography of Corals, Seagrasses, and Mangroves: An Alternative to the Center of Origin Concept." *Systematic Zoology*, volume 25, number 3 (1976), pages 201–210.
- McHargue, Laurie A. "Nesting of Turkey and Black Vultures in Panama." *The Wilson Bulletin*, volume 89, number 2 (1977), pages 328–329.
- MacIntyre, I. G., and Peter W. Glynn. "Evolution of Modern Caribbean Fringing Reef, Galeta Point, Panama." *The American Association of Petroleum Geologists Bulletin*, volume 60, number 7 (1976), pages 1054–1072.
- May, Michael L. "Warming Rates as a Function of Body Size in Periodic Endotherms." *Journal of Comparative Physiology*, volume 111, number 1 (1976), pages 55–70.
- Mendel, Frank. "Postural and Locomotor Behavior of *Alouatta palliata* on Various Substrates." *Folia Primatologica*, volume 26, number 1 (1976), pages 36–53.
- Mendoza B., Rodolfo E. "Estudio Taxonómico y Morfológico del Género

- Marchantia en Panamá.*" [Thesis] Universidad de Panamá, República de Panamá, 1976.
- Meyer, Kaniaulono B. "Dorid Nudibranchs of the Caribbean Coast of the Panama Canal Zone." *Bulletin of Marine Science*, volume 27, number 2 (1977), pages 299-307.
- Milton, Katharine. "The Foraging Strategy of the Mantelet Howler Monkey (*Allouatta palliata*) in the Tropical Forest of BCI, Panama." [Thesis] University of New York, 1977.
- Mittermeier, Russell A., and John G. Fleagle. "The Locomotor and Postural Repertoires of *Ateles geoffroyi* and *Colobus guereza*, and a Reevaluation of the Locomotor Category Semibrachiation." *American Journal of Physical Anthropology*, volume 45, number 2 (1976), pages 235-256.
- Morton, Eugene S. "Intratropical Migration in the Yellow-Green Vireo and Piratic Fly-Catcher." *The Auk*, volume 94, number 1 (1977), pages 97-106.
- . "Vocal Mimicry in the Thick-Billed Euphonia." *The Wilson Bulletin*, volume 88, number 3 (1976), pages 485-487.
- . "Oxford Biological Expedition to the San Blas Islands, Panama, 1974." *Bulletin of the Oxford University Explorers Club, New Series*, volume 1 (1976), pages 27-30.
- Reiskind, Jonathan. "Ant-Mimicry in Panamanian Clubionid and Salticid Spiders (Araneae: Clubionidae, Salticidae)." *Biotropica*, volume 9, number 1 (1977), pages 1-8.
- Ricklefs, Robert E. "Growth Rate of Birds in the Humid New World Tropics." *The Ibis*, volume 118, number 2 (1976), pages 179-207.
- Robertson, D. R., H. P. A. Sweatman, E. A. Fletcher, and M. G. Cleland. "Schooling as a Mechanism for Circumventing the Territoriality of Competitors." *Ecology*, volume 57, number 6 (1976), pages 1208-1220.
- Robinson, Michael H., and Barbara Robinson. "Discrimination Between Prey Types: An Innate Component of the Predatory Behaviour of Araneid Spiders." *Zeitschrift für Tierpsychologie*, volume 41, number 3 (1976), pages 266-276.
- . "A Tipulid Associated With Spider Webs in Papua New Guinea." *The Entomologist's Monthly Magazine*, volume 112 (1977), pages 1-4.
- Robinson, Michael H., and Nicholas D. Smythe. "A Technique for Observing the Behaviour of Small Animals Under Field Conditions." *Psyche*, volume 83, number 2 (1976), pages 210-212.
- Rodríguez T., César A., y Stella Guerrero B. "La Historia Natural y el Comportamiento de *Zygopachylus albomarginis* (Chamberlain) (Arachnida, Opiliones: Gonyleptidae)." *Biotropica*, volume 8, number 4 (1976), pages 242-247.
- Schaffer, William M., and Egbert G. Leigh. "The Prospective Role of Mathematical Theory in Plant Ecology." *Systematic Botany*, volume 1, number 3 (1976), pages 209-232.
- Scott, Norman J., Jr., Alan F. Scott, and Linda A. Malmgren. "Capturing and Marking Howler Monkeys for Field Behavioral Studies." *Primates*, volume 17, number 4 (1976), pages 527-533.
- Smith, Alan P. "Albinism in Relation to Competition in Bamboo *Phyllostachys bambusoides*." *Nature*, volume 266, number 5602 (1977), pages 527-529.
- Smith, W. John. *The Behavior of Communicating; An Ethological Approach*. Cambridge, Massachusetts: Harvard University Press, 1977.
- Smith, Wayne L. "Beneficial Behavior of a Symbiotic Shrimp to its Host Anemone." *Bulletin of Marine Science*, volume 27, number 2 (1977), pages 343-346.
- Smythe, Nicholas. "The Function of Mammalian Alarm Advertising: Social Signals or Pursuit Invitation?" *The American Naturalist*, volume 111, number 977 (1977), pages 191-194.

- Vollrath, Fritz. "Konkurrenzvermeidung Bei Tropischen kleptoparasitischen Haubennetzspinnen der Gattung *Argyrodes* (Arachnida: Araneae: Theridiidae)." *Entomological Germanica*, volume 3, number 1/2 (1976), pages 104–108.
- West, David A. "Aposematic Coloration and Mutualism in Sponge-Dwelling Tropical Zoanths." In *Coelenterate Ecology and Behavior*, edited by G. O. Mackie. New York: Plenum Press, 1976.
- Wilder, George J. "Structure and Development of Leaves in *Carludovica palmata* (Cyclanthaceae) with Reference to Other Cyclanthaceae and Palmae." *American Journal of Botany*, volume 63, number 9 (1976), pages 1237–1256.
- . "Structure and Symmetry of Species of the *Asplundia* Group (Cyclanthaceae) Having Monopodial Vegetative Axes: *Schultesiophytum Choriantum*, *Dicranopygium* sp. nov., *Asplundia rigida*, and *Thoracocarpus bisectus*." *Botanical Gazette*, volume 138, number 1 (1977), pages 80–101.
- Williams, Ernest E., and A. Stanley Rand. "Species Recognition, Dewlap Function and Faunal Size." *American Zoologist*, volume 17, number 1 (1977), pages 261–270.
- Willis, Edwin O. "Seasonal Changes in the Invertebrate Litter Fauna on Barro Colorado Island, Panama." *Revista Brasileira de Biologia*, volume 36, number 3 (1976), pages 643–657.
- Windsor, Donald M. "Birds as Predators on the Brood of *Polybia* Wasps (Hymenoptera: Vespidae: Polistinae) in a Costa Rican Deciduous Forest." *Biotropica*, volume 8, number 2 (1976), pages 111–116.
- , editor. "Environmental Monitoring and Baseline Data; Tropical Studies." [Compiled under the *Smithsonian Institution Environmental Science Program*] Washington, D.C.: Smithsonian Institution, 1976.
- Wolda, Hindrik. "Ecología de Insectos en la Provincia de Chiriquí." *Conscien- cia*, volume 4, number 1 (1977), pages 3–5.
- , editor. "La Estabilidad del Medioambiente Tropical y sus Poblaciones." Resúmenes Recibidos para el *IV Simposium Internacional de Ecología Tropical*, 212 pages, 1977.
- Zaret, Thomas M., and J. Samuel Suffern. "Vertical Migration in Zooplankton as a Predator Avoidance Mechanism." *Limnology and Oceanography*, volume 21, number 6 (1976), pages 804–813.
- Zucker, Naida. "Neighbor Dislodgement and Burrow-Filling Activities by Male *Uca musica terpsichores*: A Spacing Mechanism." *Marine Biology*, volume 41, number 3 (1977), pages 281–286.

HISTORY AND ART

COOPER-HEWITT MUSEUM

- Dee, Elaine Evans. "Watercolors and Drawings." In *The Royal Pavilion at Brighton*. New York: Cooper-Hewitt Museum, Smithsonian Institution, 1977.
- Oliver, Richard B. "Drawing Toward a More Modern Architecture." *Architectural Design Magazine*, June 1977, pages 444–446, London. (Entire issue served as a catalogue for the Cooper-Hewitt exhibition of the same name.)
- Sunday, Milton. "Repeat, Repeat, Repeat." *Craft Horizons*, August 1977, pages 52–54.
- . [Introductory essay] *Fabric of Jewish Life: The Textiles in the Collection of the Jewish Museum*. New York: Jewish Museum, 1977.
- Taylor, Lisa M. [Foreword] *Man transForms*, by Hans Hollein. New York: Cooper-Hewitt Museum, Smithsonian Institution, 1976.
- . [Foreword] *Cooper-Hewitt Museum 1977 Benefit Auction*. New York: Cooper-Hewitt Museum, Smithsonian Institution, 1977.

- . [Foreword] *The Royal Pavilion at Brighton*. New York: Cooper-Hewitt Museum, Smithsonian Institution, 1977.
- . [Foreword] *The Sculpture of Minoru and Niizuma*. Tokyo: Cibu Museum, 1977.
- . "Turn of the Century Life." *Old Westbury News*, Spring 1977, page 4.

FREER GALLERY OF ART

- Atil, Esin. Monthly articles for *Turkey Today* [the Embassy of Turkey]. January-September 1977.
- . "Pottery: The High Art of Lusterwares." *The Washington Post*, May 8, 1977.
- Hobbs, Susan. "The Little-Known Side of One Great American Collector." *Smithsonian*, volume 7, number 10 (January 1977), pages 50-57.
- . "A Connoisseur's Vision: The American Art Collection of Charles Lang Freer." *American Art Review*, August 1977, pages 76-101.
- Lovell, Hin-cheung. "Some Northern Chinese Ceramic Ware of the Sixth and Seventh Centuries." *Oriental Art*, Winter 1975, pages 328-343.
- . "A Question of Choice, a Matter of Rendition." *Renditions*, number 6 (Spring 1976), pages 63-69.
- Winter, John. [Obituary] "Harold Phillip Stern." *Washington Conservation Guild Newsletter*, volume 2, number 2 (1977), page 5.

HIRSHHORN MUSEUM AND SCULPTURE GARDEN

- Fox, Howard. "Through the Golden Door: America's Immigrant Artists." *Jewish Quarterly*, Spring 1977.
- , publisher and co-editor. *Sun & Moon: A Quarterly of Literature and Art*, Washington, D.C.
- Fox, Howard, and Douglas Messerli. *Index to Periodical Fiction in English, 1965-1969*. Metuchen, New Jersey: Scarecrow Press, 1977.
- Gettings, Frank. *E. E. Cummings: The Poet as Artist*. Washington, D. C.: Smithsonian Institution Press, December 1976.
- . *Roger Long, Paintings and Drawings*. Washington, D. C.: Federal Reserve Board, Fine Arts Program, April 1977.
- Lerner, Abram. *Auguste Rodin: The Burghers of Calais*. Washington, D. C.: Museum Press, Inc., 1976.
- Millard, Charles. "Fauvism." *Hudson Review*, Winter 1976/1977, pages 576-580.
- . *The Sculpture of Edgar Degas*. Princeton, New Jersey: Princeton University Press, 1977.
- Rosenzweig, Phyllis. *The Thomas Eakins Collection of the Hirshhorn Museum and Sculpture Garden*. Washington: Smithsonian Institution Press, 1977.
- . [Review] *The Natural Paradise*, edited by Kynaston McShine. *Museum News*, July/August 1977.
- Tighe, Mary Ann. "The Caricature of David Levine." *The New Republic*, March 20, 1976.
- . "Philip Pearlstein: Dis-Armorying Art History." *The New Republic* April 24, 1976.
- . "The Daguerreotypes of Southworth and Hawes." *Smithsonian*, October 1976.
- . [Review] *The Art Scene*, by Calvin Tompkins. *The New Republic*, October 23, 1976.
- . "A New Federal Agency: Rx for Museum Malaise." *Art in America*, November/December 1976.
- . [Review] *Portraits*, by Richard Avedon. *The Washington Post*, November 7, 1976.

- . "The Best Art and Photography Books of 1976." *The Washington Post*, December 9, 1976.
- . "Art and Exhibitionism." *The New Republic*, December 10, 1976.
- . [Review] *Persepolis and Ancient Iran*. *Smithsonian*, December 1976.
- . [Review] *Calder Universe*, by Jean Lipman. *The Washington Post*, December 19, 1976.
- . [Review] *Eisenstaedt's Album*, by Philip Kunhardt, Jr. *The Washington Post*, December 19, 1976.
- . [Review] *Lisette Model Exhibition*. *Art in America*. January/February 1977.
- . "Gertrude Kasebier, Lost and Found." *Art in America*, March/April 1977.
- . "DiSuevero in Grand Rapids: The Public Prevails." *Art in America*, March/April 1977.
- . "Art on the Line: New York, Moscow, New York, Moscow." *The New Republic*, April 16, 1977.
- . [Review] *Callahan and Paul Strand: Sixty Years of Photographs*. *The Washington Post*, March 10, 1977.
- . [Review] *Alfred Stiglitz and the American Avant-Garde*. *The New York Times Book Review*, May 8, 1977.
- . [Review] *An Early Victorian Album: The Photographic Masterpieces of David Octavius Hill and Robert Adamson*, edited by Colin Ford. *Smithsonian*, May 1977.
- Weil, Stephen E. "Art and the Law." *Law Library Journal*, volume 70, number 1 (February 1977), pages 1-4.
- . "'If Men Were Angels. . .,' An Overview of Museums and the Law." *Museum News*, volume 56, number 1 (September/October 1977), pages 35-41.

JOSEPH HENRY PAPERS

- Mollela, Arthur P., and Nathan Reingold, editors. "The Interaction of Science and Technology in the Industrial Age." [Special issue] *Technology and Culture*, volume 17 (October 1976).
- Reingold, Nathan. "The Case of the Disappearing Laboratory." *American Quarterly*, volume 29 (Spring 1977), pages 79-101.
- Reingold, Nathan, and Arthur P. Molella. [Introduction] "The Interaction of Science and Technology in the Industrial Age." [Special issue] *Technology and Culture*, volume 17 (October 1976).

NATIONAL COLLECTION OF FINE ARTS

BOOKS

- Americas: The Decorative Arts in Latin America in the Era of the Revolution*. 80 pages, 4 color and 71 black-and-white illustrations. Washington, D.C.: Smithsonian Institution Press, October 1976. \$6.80.
- Robert Rauschenberg*. 218 pages, 21 color and 259 black-and-white illustrations. Washington, D.C.: National Collection of Fine Arts, March 1977. Paper \$15.50.

ARTICLES

- Birmingham, Peter. [Essay] *The Art of Poetry*. [Exhibition checklist] November 1976.
- . [Essay] *China Revisited: Ink Paintings by Thomas George*. [Exhibition checklist] February 1977.
- Flint, Janet A. [Essay] *Jacob Kainen: Prints, A Retrospective*. [Exhibition catalogue] November 1976.

- . [Checklist of Prints] *Jacob Kainen: Prints, A Retrospective*. [Exhibition catalogue] November 1976.
- . [Essay] *Raphael Soyer: Drawings and Watercolors*. [Exhibition catalogue] September 1977.
- Herman, Lloyd. [Foreword] *The Object as Poet*. [Exhibition catalogue] December 1976.
- . [Essay] *Paint on Wood: Decorated American Furniture Since the 17th Century*. [Exhibition catalogue] May 1977.
- . [Acknowledgments] *Americas: The Decorative Arts in Latin America in the Era of the Revolution*. [Book] October 1976.
- Hopps, Walter. [Acknowledgments] *Robert Rauschenberg*. [Exhibition catalogue] March 1977.
- Hormats, Bess. "Whatever Happened to the German War Art Collection?" *Art Monthly* (London), December 1976.
- Taylor, Joshua C. [Foreword] *America: The Decorative Arts in Latin America in the Era of the Revolution*. [Book] October 1976.
- . [Foreword] *Jacob Kainen: Prints, A Retrospective*. [Exhibition catalogue] November 1976.
- . [Foreword] *Raíces y Visiones/Roots and Visions*. [Exhibition checklist] July 1977.
- . [Foreword] *Robert Rauschenberg*. [Exhibition catalogue] March 1977.
- . [Essay] *Arthur Wesley Dow (1857-1922)*. [Exhibition checklist] July 1977.
- . [Essay] *Robert Rauschenberg*. [Exhibition checklist] October 1976.
- Truettner, William. "George Catlin, Frank Wilkin, and the Prince of Econchatti." *Apollo*, volume 105 (February 1977), pages 124-126.

FLYERS AND PROGRAMS

- Kaleidoscope Day: The Third Dimension*. May 1977.
- The Philadelphia Trio*. October 1976.
- Carmaña Gallo*. November 1976.
- "Poetry in Sound." December 1976.
- Liliane Questel*. January 1977.
- Sara Stern, Alice Takemoto*. May 1977.
- Daniel Comegys, Maurice Murphy*. June 1977.
- Kathleen Golding, Alice Takemoto*. June 1977.
- Candace Johnson, Al Gifford, Marjorie Lee*. June 1977.
- Pamela Barr, Lydia Bernstein*. July 1977.
- Lydian Chamber Players*. August 1977.

NATIONAL MUSEUM OF HISTORY AND TECHNOLOGY

Office of the Director

- Bedini, Silvio A. "Owls in the Attic." In *The Smithsonian Experience*, pages 141-143. Washington, D.C.: Smithsonian Institution, 1977.
- . "The Hardware of History." In *The Smithsonian Experience*, pages 96-103. Washington, D.C.: Smithsonian Institution, 1977.
- Friedel, Robert. *Men, Materials, and Ideas: A History of Celluloid*. [Ph.D. Dissertation] Baltimore: Johns Hopkins University, 1977.
- Friedel, Robert, and John W. Servos. "The Saccharin Flap of '07." *The Washington Post*, March 27, 1977, page C5.
- Hindle, Brooke. *The Meaning of the Bethlehem Waterworks*. Bethlehem, Pennsylvania, 1977.
- . "Military History and the Museum." *Army Museum Newsletter*, number 14 (1977), pages 4-7.

- . "Science and the American Revolution." *The Journal of General Education*, number 28 (Fall 1976), pages 223–236.
- Lawless, Benjamin W. "The Smithsonian Style." *The Smithsonian Experience*, pages 52–59. Washington, D.C.: Smithsonian Institution, 1977.
- Lawless, Benjamin W., and Michael Harris. "Letters to a Highly Regarded Institution," by Michael Lawless and Benjamin Harris [sic]. *Gargoyle*, September 1977, pages 8–19.
- Post, Robert C. *Physics, Patents, and Politics: A Biography of Charles Grafton Page*. New York: Science History Publications, 1976.
- . "Steel Ropes into the Howling Wilderness." In *Los Angeles: Biography of a City*, edited by Johns and Laree Caughey, pages 192–197, Berkeley, Los Angeles, and London: University of California Press, 1976.
- . "Story of the Pacific Railway." *Evening Outlook*, Santa Monica, California, September 11, 1976, pages 6A–7A.
- . "Stray Sparks from the Induction Coil: The Volta Prize and the Page Patent." In *Proceedings of the Institute of Electrical Engineers*, volume 64, page 1279–1287. 1976.
- , contributing author. *Signers of the Constitution: Historic Places Commemorating the Signing of the Constitution*. Washington, D.C.: Department of the Interior, National Park Service, 1976.
- Tillotson, Robert G. *Museum Security/Le Sécurité dan les Musées*. Edited by Diana D. Menkes. Paris: International Council of Museums, May 1977.

Department of Applied Arts

- Adrosko, Rita J. "18th Century American Weavers, Their Looms and Their Products." In *Imported and Domestic Textiles in Eighteenth-Century America*. 1975 Proceedings of the Irene Emery Roundtable on Museum Textiles. Washington, D.C.: The Textile Museum, 1976.
- . [Introduction] *22 Polish Textile Artists*. Washington, D.C.: Smithsonian Institution Press, 1977.
- . "Weaving." In *Spinning and Weaving*. Washington, D.C.: Smithsonian Institution Press, 1977.
- Bruns, Franklin R., Jr. "The United States 'Liberty' Issue, 1954–1963." In *The American Philatelic Congress Book, 1976*, pages 45–76. Wilmington, Delaware: The American Philatelic Congress, 1976.
- . *American Stamps*. Washington, D.C.: Smithsonian Institution Press, 1977.
- Clain-Stefanelli, Elvira. *America di ieri nelle medaglie e nelle placchette di Victor D. Brenner*. [Reprint from *La Medaglia*, pages 53–67] Milan, Italy: S. Johnson, 1976.
- . *Dimitri Ferentinos and His Art*. Athens, Greece 1977.
- Clain-Stefanelli, Elvira, and Vladimir Clain-Stefanelli. *Das grosse Buch der Münzen und Medaillen*. Munich, Germany: Battenberg, 1976. [Published with an appendix by Günter Schön. *Münzkatalog Europa von 1900 bis heute*.]
- Hebert, Raymond J. "The Mecklenberg Declaration of Independence Centennial Medal." *The Numismatist*, February 1977, pages 273–284.
- Marzio, Peter C. *The Art Crusade*. Washington, D.C.: Smithsonian Institution Press, 1976.
- . "Democracy in American Art." In *Papers on American Art*. Philadelphia: Friends of Independence Historical Park, 1976.
- . "Illustrated News in Early American Prints." In *American Printmaking before 1876*. Washington, D.C.: Library of Congress, 1976.
- . "Mr. Audubon and Mr. Bien: An Early Phase in the History of American Chromolithography." In *Prospects*, edited by Jack Salzman. New York: Burt Franklin, 1976.

- . "The American Drawing Books." In *Philadelphia Printmaking before 1860*. Philadelphia: Tincum Press, 1977.
- . *Perfect Likenesses: Portraits for History of the Indian Tribes of North America (1837-44)*. Washington, D.C.: Smithsonian Institution Press, 1977.
- Norby, Reidar. "The Scandinavian Stamp Lexicon." *Scandinavian Scribe*, volume 12, number 1 (1976), pages 5-6 and 11-12.
- . *Foreign Stamps*. Washington, D.C.: Smithsonian Institution Press, 1977.
- Ostroff, Eugene. *Conserving and Restoring Photographic Collections*. [Revised edition] Washington, D.C.: American Association of Museums, 1976.
- . *Photography*. Washington, D.C.: Smithsonian Institution Press, 1977.
- Scheele, Carl H. *American Post Offices*. Washington, D.C.: Smithsonian Institution Press, 1977.

Department of Cultural History

- Ahlborn, Richard E. "Comments on Textiles in Eighteenth Century Spanish New Mexico." In *Imported and Domestic Textiles in 18th Century America*, edited by Patricia L. Fiske, pages 132-146. Washington, D.C.: The Textile Museum, 1976.
- Fesperman, John T. "Spanish and American Organbuilding in Mexico." *Newsletter of the American Musical Instrument Society*, volume 5, number 2/3 (June/October 1976), pages 1-2, and 4.
- . *Works of Nicolas de Grigny*. [Performance on organ built by Charles Fisk at the University of Vermont] Orion Master Recordings, Inc. (ORS76253)
- Golovin, Anne C. "William King Jr., Georgetown Furniture Maker." *Antiques*, volume 111, number 5 (May 1977), pages 1032-1037.
- Harris, Karyn Jean. *Costume Display Techniques*. Nashville, Tennessee: American Association for State and Local History, 1977.
- Hollis, Helen R. *The Musical Instruments of Joseph Haydn: An Introduction*. Washington, D.C.: Smithsonian Institution Press, 1977.
- Kidwell, Claudia. "Apparel for Ballooning with Speculations on More Commonplace Garb." *Costume* (London), number 11, pages 73-87.
- Roth, Rodris. "Relic Furniture and George J. Henkels." In *Collector's Notes*, edited by Dorothy E. Ellesin. *Antiques*, volume 110, number 2 (August 1976), pages 276 and 356.
- . "A Patent Model by John Henry Belter." *Antiques*, volume 111, number 5 (May 1977), pages 1038-1040.
- Sheldon, Robert. "Brandenburg Concerto I." In *Brandenburg Concerti*, by J. S. Bach. [Performance with Aston Magna Foundation on horn in F by Johann Grinwald, Munich, 1725, from Smithsonian collection] Columbia Records.
- Weaver, James. *Pieces de Clavecin*, by Jacques Duphly. [Performance on harpsichord by Benoist Stehlin, Paris, 1770, from Smithsonian collection] The Smithsonian Label.
- . *Pieces de Clavecin*, by Antoine Forqueray. [Performance on harpsichord] Nonesuch Records.
- . "Brandenburg Concerto II." In *Brandenburg Concerti*, by J. S. Bach. [Performance with Aston Magna Foundation on harpsichord] Columbia Records.
- . *Sonatas for Violin and Basso Continuo* by Francesco Geminiani. [Performance on harpsichord] Musical Heritage Society.

Department of Industries

- Berkebile, Don H. *American Carriages, Sleighs, Sulkies and Carts*. New York: Dover Publications, Inc., 1977.
- Gardner, Paul V. *In the Smithsonian: The National Museum of History and Technology: American Glass*. Washington, D.C.: Smithsonian Institution Press, 1977.
- Schlebecker, John T. "The Use of Objects in Historical Research." *Agricultural History*, volume 51 (January 1977), pages 200–208.
- . "Who's a Leader? The Published Documents: A Commentary." In *Agricultural Literature: Proud Heritage—Future Promise*, pages 169–171. Washington, D.C.: Associates of the National Agricultural Library, 1977.
- . "Eighteenth Century Living Historical Farms: A Search for Identity." In *Proceedings of the Annual Meeting, 1976*, pages 32–34. Washington, D.C.: Association for Living Historical Farms and Agricultural Museums, 1977.
- . "Standards of Excellence for Living Historical Farms and Agricultural Museums." In *Proceedings of the Annual Meeting, 1976*, pages 1–8. Washington, D.C.: Association for Living Historical Farms and Agricultural Museums, 1977.
- , editor. [Bi-monthly] *Living Historical Farms Bulletin*, volume 6, numbers 1–6 (November 1976–September 1977).
- Sharrer, G. Terry. "Alexandria Industry and Commerce, 1800–1900." In *Alexandria, A Town in Transition*, edited by John Macoll. Alexandria, Virginia: Alexandria Historical Society, 1977.
- White, John H., Jr. "Grice and Long: Steam-Car Builders." In *Prospects, An Annual of American Cultural Studies*, volume 2, pages 25–39. New York: Burt Franklin & Co., Inc., 1976.
- . "Splendor and Gloom: The Decoration of Victorian Railroad Cars." In *Nineteenth Century*, volume 3 (Spring 1977), pages 38–47.
- . "The Why in History." In *Trains Magazine*, volume 37 (1977) page 66.
- . "The Cover Design 'A Perfect Light Is a Luxury': Pintsch Gas Car Lighting." In *Technology and Culture*, volume 18, pages 64–69.
- , editor. *Railroad History*, numbers 135 (Autumn 1976) and 136 (Spring 1977).

Department of National and Military History

- Klaphor, Margaret B. "Presidential China." *Cincinnati Antiques Festival 1976*, pages 76–80, October 1976.
- . [Foreword] *Behind the Scenes*, by the Southern Maryland Regional Committee of National Society of Colonial Dames of America. 1977.
- . *The First Ladies Cookbook*. Historical text of Parents' Magazine Press, New York, 1977. [Chapters on the Ford administration and the Carter administration]
- Langley, Harold D., Francis L. Loewenheim, and Manfred Jones, editors. *Roosevelt and Churchill: Carteggi Segreto Di Guerra*. [Italian edition of *Roosevelt and Churchill: Their Secret Wartime Correspondence*] Milan: Arnoldo Mondadori, 1977.
- Lundeberg, Philip K. "Convoy and Dry Docks." In *Dictionary of American History*, volume 2, pages 217–218 and 375. New York: Charles Scribner's Sons, 1976.
- . "Nautical Archaeology: Legal Aspects." In *Proceedings of the Second International Conference of Maritime Museums, Oslo, 1975*, pages 27–33. Oslo: Norsk Sjøfartsmuseum, 1977.
- . "Samuel Eliot Morison, 1887–1976." *Military Affaires*, volume 40 (1976), pages 145–146.

- . "Search for Continental Gunboats at Schuylers Island, Lake Champlain, New York." In *National Geographic Society Research Reports, 1968*, pages 213–223. Washington, D.C.: Washington National Geographic Society, 1976.
- . "Staff Security Training." In *Museum Security: La Sécurité dans les Musées*, pages 12–15, 65–67, and 190–193. Paris: International Council of Museums, 1977.
- Mayo, Edith P. "The Woman's Pavillion at the Philadelphia Centennial." In *Bulletin of the National Council of Women*, volume 24, number 3 (November/December 1976).
- . "Ladies and Liberation: Icon and Iconoclast in the Women's Movement." *Icons of America*, Fall 1977.

Department of Science and Technology

- Belfield, Robert B. *Relics of the Electrical Age*. Washington, D.C.: Smithsonian Institution, Division of Electricity, 1977.
- Eklund, Jon B. "Of a Spirit in the Water: Some Early Ideas on the Aerial Dimension." *ISIS*, volume 67 (1976), pages 527–550.
- Finn, Bernard S. "Franklin as Electrician." In *Proceedings of the IEEE*, volume 64, pages 1270–1273. 1976.
- . "Growing Pains at the Crossroads of the World: A Submarine Cable Station in the 1870s." In *Proceedings of the IEEE*, volume 64, pages 1287–1292. 1976.
- . *Person-to-Person Exhibit Directory*. Washington, D.C.: Smithsonian Institution, Division of Electricity, 1976.
- Forman, Paul. "'Atom Smashers: Fifty Years'—Preview of an Exhibit on the History of High Energy Accelerators." In *Proceedings of the 1977 Particle Accelerator Conference. IEEE Transactions on Nuclear Science*, volume NS-24, pages 1896–1899. 1977.
- Hamarneh, Sami K. "India's Contribution to Medieval Arabic Medical Education and Practice." *Studies in History of Medicine*, volume 1, New Delhi, India, page 5–35. 1977.
- . "Reconstruction of an 1884 American Pharmacy." *Pharmacy in History*, volume 19 (1977), pages 109–114.
- Hamarneh, Sami K., and A. Y. al-Hassan, editors. *Institute for the History of Arabic Science News Letter*, numbers 1–5 (June 1976–April 1977).
- Mayr, Otto. "The Science-Technology Relationship as a Historiographic Problem." In *Technology and Culture*, volume 17 (1976), pages 663–673.
- Multhauf, Robert P. "Geology, Chemistry, and the Production of Common Salt." *Technology and Culture*, volume 17 (1976), pages 634–645.
- Sivowitch, Elliot N. [Introductory essay] *The Telephone, An Historical Anthology*. New York: Arno Press, 1977.
- Tyne, Gerald F. J. *Saga of the Vacuum Tube*. Indianapolis: Howard W. Sams and Co., Inc., 1977.

NATIONAL PORTRAIT GALLERY

- Beard, Richard E., and Nancy B. Beard. "Some Notion of Nations." [Review of the exhibition "A Nation of Nations"] *Roundtable Reports*, Summer 1976.
- Henderson, Amy E. "Expansionism and Louisiana." [Review] *This Affair of Louisiana*, by Alexander De Conde. *Reviews in American History*, June 1977.
- . [Review] *The Impact of the American Revolution Abroad*, Library of Congress Symposia on the American Revolution. *The New England Quarterly*, June 1977.

- . [Review] *A Fair and Happy Land*, by William A. Owen. *The Filson Club History Quarterly*, June 1977.
- . [Review] *Revolt in Louisiana*, by John Preston Moore. *Illinois State Historical Journal*, August 1977.
- Miles, Ellen G. [Doctoral dissertation] *Thomas Hudson (1701–1779): Portraitist to the British Establishment*. University Microfilms, June 1977.
- . *Portrait Painting in America: The Nineteenth Century*. New York: Antiques Magazine Library, 1977.
- Miller, Lillian B. [Review] *The Patriots: The American Revolution Generation of Genius*, edited by Virginus Dabney. *The Journal of American History*, September 1976.
- . [Review] *The New York Little Renaissance: Iconoclasm, Modernism and Nationalism in American Culture, 1908–1927*, by Arthur Frank Wertheim. *History Reviews of New Books*, September 1976.
- . [Review] *Toward a National Taste*, by J. Meredith Neil. *The William and Mary Quarterly*, October 1976.
- . [Review] *A Rising People: The Founding of the United States 1765 to 1789*, by the American Philosophical Society, 1976. *Pennsylvania Magazine of History and Biography*, January 1977.
- . [Review] *Architecture in the United States: A Survey of Architectural Styles Since 1776*, by Ralph W. Hammett. *History: Reviews of New Books*, February 1977.
- . [Review] *A Cultural History of the American Revolution: Painting, Music, Literature and the Theatre in the Colonies and the United States from the Treaty of Paris to the Inauguration of George Washington, 1763–1789*, by Kenneth Silverman. *The Journal of American History*, June 1977.
- O'Toole, Dennis. [Review] *The Message in the Bottle*, by Walker Percy. *Roundtable Reports*, Summer 1977.
- Voss, Frederick. [Review] *Manual for Museums*, by Ralph Lewis. *American Archivist*, July 1977.
- Yellis, Kenneth. "To Speak the Name of the Dead." [Review of the exhibition "Treasures of Tutankhamen"] *Roundtable Reports*, Winter 1977.

OFFICE OF AMERICAN STUDIES

- Washburn, Wilcomb E. *The Indian in America*. [Japanese translation arranged with Harper and Row Publishers Inc. through Japan UNI Agency, Inc.] Tokyo: Nan'un-do Company, Ltd., 1977.
- . "The Moral Equivalent to Football." *The New Republic*, volume 177, number 4 (July 23, 1977), pages 33–36.
- Washburn, Wilcomb E., and Robert M. Utley. *The American Heritage History of the Indian Wars*. New York: American Heritage Publishing Company, 1977.

MUSEUM PROGRAMS

CONSERVATION-ANALYTICAL LABORATORY

- Goodway, Martha E. "Metallographic Preparation of Art and Archaeological Specimens." *Technology and Conservation*, Spring 1977, pages 10–13.
- , editor. *Corrosion and Metal Artifacts—A Dialogue between Conservators and Archaeologists and Corrosion Scientists*, NBS Special Publication 479. [Proceedings of meeting at the National Bureau of Standards] March 1976.

SMITHSONIAN INSTITUTION ARCHIVES

- Lytle, Richard H., Maynard Brichford, Harriet Ostroff, and John P. Butler. "Intellectual Central of Historical Records." *The American Archivist*, volume 40 (1977), pages 307–313.
- . [Review] *SPINDEX II at Cornell University and a Review of Archival Automation in the United States*, by H. Thomas Hickerson, Joan Winters, and Venetia Beale. *The American Archivist*, volume 40 (1977).

SMITHSONIAN INSTITUTION LIBRARIES

- Abelson, Alison [Review] *Theatre Game File*, by Viola Spolin. *Roundtable Reports*, Spring 1967, page 10.
- Goodwin, Jack. "Current Bibliography in the History of Technology (1975)." *Technology and Culture*, volume 18 (April 1977), pages 272–390.
- Pisano, Dominick. "Charles Lindbergh: A Selected Bibliography." In *Charles A. Lindbergh: An American Life*, by Tom D. Crouch. Washington, D.C.: Smithsonian Institution Press, 1977.
- Ratzenberger, Katharine. [Review] *The American Personality: The Artist-Illustrator of Life in the United States, 1860–1930*. [Exhibition at the Grunwald Center for the Graphic Arts] *Library Journal*, November 1, 1976.
- . [Review] *American Architecture and Art: A Guide to Information Sources*, by David M. Sokol. *Art Libraries Society of North America Newsletter*, volume 5, number 1, (December 1976).
- . [Review] *The Paintings and the Journal of Joseph Whiting Stock*. *Library Journal*, February 15, 1977.
- . [Review] *Women in American Architecture: A Historic and Contemporary Perspective*. *Library Journal*, May 15, 1977.
- . [Review] *American Architects from the First World War to the Present*, by Lawrence Wodehouse. *Library Journal*, June 15, 1977.
- Shank, Russell. "Smithsonian Institution Libraries." *Bowker Annual*, 1977, pages 46–49.

SMITHSONIAN INSTITUTION TRAVELING EXHIBITION SERVICE

EXHIBITION CATALOGUES

- Karageorghis, Vassos. *Treasures of Cyprus*. November 1976.
- Tanavoli, Parvi, and John Wertime. *Locks from Iran: Pre-Islamic to Twentieth Century*. October 1976.
- Silverworks from Rio de la Plata, Argentina*. October 1976.
- The Human Form: Sculpture, Prints and Drawings by Fritz Wotruba*. April 1977.

BOOKLETS

- Davis, Nancy. *Folk Woodcuts from Brazil's Northeast*. November 1976.
- Mirage in the West*. January 1977.

FOLDERS

- Timbrell, Charles. *Salzburger Festspiele!*. April 1977.
- Naive Art in Yugoslavia*. October 1976.
- Treasures of Cyprus*. November 1976.
- Divine Favors, Human Vows: Milagros from Puerto Rico*. May 1977.
- America's First Ladies*. July 1977.

POSTERS

Oliphant: Paintings and Cartoons. June 1977.

And Now a Message . . . A Century of American Advertising, 1830–1930.
August 1977.

PUBLIC SERVICE

ANACOSTIA NEIGHBORHOOD MUSEUM

The Anacostia Story: 1608–1930, March 3, 1977.

DIVISION OF PERFORMING ARTS

Taylor, J. R. [Liner notes] "Fletcher Henderson: Developing an American Orchestra, 1923–1937." Smithsonian Collection recording.

———. [Liner notes] "Jammin' for the Jackpot: Big Bands and Territory Bands of the 1930s." New World Records recording.

———. [Liner notes] "Jim Hall: Commitment." Horizon recording.

———. [Liner notes] "Max Roach: The Many Sides of Max." Trip recording.

———. [Liner notes] "Duke Ellington: Carnegie Hall Concert 1947." Fantasy recording.

———. [Liner notes] "Charlie Parker: Encore." Savoy recording.

———. "Jimmy Owens: A Master's Voice." *Radio Free Jazz*, December 1976.

———. "Horace Silver Discography." *Radio Free Jazz*, March 1977.

———. "Bond Street Breakdown." *Village Voice*, July 18, 1977.

———. [Review] "Fats Waller Strides Out of Sight." *Village Voice*, August 1, 1977.

———. "Newport Jazz Festival Events." *Radio Free Jazz*, August 1977.

———. [Review] "McCoy Turner: Fly with the Wind." *Jazz Magazine*, number 2.

———. [Review] "Sonny Clark Memorial Album." *Jazz Magazine*, number 2.

———. [Review] *Jazz Is*, by Nat Hentoff. *Jazz Magazine*, number 3.

———. [Review] "Kenny Dorham: But Beautiful." *Jazz Magazine*, number 3.

———. [Review] "Mal Waldron: One and Two." *Jazz Magazine*, number 3.

———. [Review] "Art Farmer: Crawl Space." *Jazz Magazine*, number 4.

———. [Review] "Urbie Green: The Fox." *Jazz Magazine*, number 4.

———. [Program notes] Smithsonian Jazz Heritage, Jazz Connoisseur, and Blues concerts. 1976–1977.

———. [Preface and Introductions] Greenwood Press Jazz Periodicals, Microform Series.

Williams, Martin. "American Jazz" and "Duke Ellington." In *The Enjoyment of Music*, by Joseph Machlis, fourth edition. New York: W. W. Norton and Co., Inc.

———. [Liner notes for recording] "Ellington: American Composer." In *Duke Ellington 1938*, Smithsonian Collection recording.

———. [Program notes] "Ellington and *Black, Brown and Beige*." September 29, 1977.

———. [Liner notes for recording] "John Birks Gillespie: The Development of an American Artist." Smithsonian Collection recording.

OFFICE OF ELEMENTARY AND SECONDARY EDUCATION

[Newsletter] *Art-to-Zoo*. Published several times during the year.

Let's Go to the Smithsonian: A Bulletin for Schools. Published several times during the year.

Smithsonian Learning Opportunities for Schools: 1977-1978. Washington, D.C.: Smithsonian Institution Press, August 15, 1977.

SMITHSONIAN RESIDENT ASSOCIATE PROGRAM

- Edelson, Paul J., co-author. "Community College Aims to Expand Occupational Opportunities for the Deaf." *Hearing Rehabilitation Quarterly*, Winter 1977.
- Lee, Margaret V., art director, and Janet W. Solinger, producer. "Inscapes: Words and Images." Poster reproduction of an original serigraph by Philip Guston with poetry by Stanley Kunitz. [Commissioned to commemorate the city-wide poetry and visual arts festival] Washington, D.C., December 1976.

THE NATIONAL GALLERY OF ART

- Brown, David A. "An Apollo and Marsyas by Anselmi." *Antologia di Belle Arti*, volume 1, number 1 (March 1977), pages 2-6.
- . "A Drawing by Zanetti after a Fresco on the Fondaco dei Tedeschi." *Master Drawings*, volume 15, number 1 (Spring 1977), pages 31-44.
- Carmean E. A., Jr. "Morris Louis and the Modern Tradition: Part II, Cubism; Part III, Impression." *Arts Magazine*, volume 51, number 2 (October 1976), pages 112-117.
- . *Notes on Anne Truitt*. [Exhibition catalogue.] Charlottesville, Virginia: University of Virginia Art Museum, October 1976.
- . "Morris Louis and the Modern Tradition: Part IV, Fauvism; Part V, Later Matisse." *Arts Magazine*, volume 51, number 3 (November 1976), pages 122-126.
- . "Morris Louis and the Modern Tradition: Part VI, Abstraction." *Arts Magazine*, volume 51, number 4 (December 1976), pages 116-119.
- . "Juan Gris Fantomas." *Arts Magazine*, volume 51, number 5 (January 1977), pages 116-119.
- . "Les Fleurs de Malraux." [Review] *Picasso's Mask*, by Andre Malraux. *The Washington Post*, January 2, 1977.
- Collins, Jane D. "Plural/Singular Headings for Art Media: an ARLIS/NA Position Paper." *ARLIS/NA Newsletter*, volume 4, number 6 (October 1976), page 171.
- Edelstein, J. M. [Review] *Black Sun: The Brief Transit and Violent Eclipse of Harry Crosby*, by Geoffrey Wolff. *The New Republic*, volume 175, number 19 (November 6, 1976), pages 25-26.
- . [Review] *The Death of Venice*, by Stephen Fay and S. Knightley. *The New Republic*, volume 176, number 5 (January 29, 1977), pages 34-36.
- . [Review] *William Caxton*, by George Painter. *The New Republic*, volume 177, number 27, (July 2, 1977), pages 37-38.
- Fine, Ruth Eileen. *Ernest Haskell: 1876-1925*. [Exhibition catalogue] Brunswick, Maine: Bowdoin College Museum of Art, 1976. [Introductory essay under the name of Ruth Fine Lehrer]
- . *Watercolors by Robert Murray and Toni Onley*. [Exhibition catalogue] Philadelphia: Olympia Galleries, Ltd., 1976. [Introductory essay under the name Ruth Fine Lehrer]
- , editor. "Notes from the Women's Caucus." *Art Journal and Newsletter*, College Art Association, 1977.
- Lewis, Douglas. "Jacopo Sansovino, Sculptor of Venice." In symposium, *Titan: His World and His Legacy (The Bampton Lectures in America)*. New York: Columbia University, October 16, 1976.

- . "A New Book of Drawings by Francesco Muttoni." *Arte Veneta*, volume 30 (1976), pages 200–214.
- . "Sculpture, XIII to XX Century." In *The National Gallery of Art*, edited by John Walker. New York: Harry N. Abrams, Inc., 1976.
- . "Interrelationships between Media in Palladio's Domestic Designs." [Paper for joint session] *The Renaissance in Italy*, meetings of the College Art Association and the Society of Architectural Historians, Los Angeles, February 3, 1977.
- . "The St. Petersburg Bronzes of Barye's *War and Peace*." *Pharos*, volume 14, number 1 (May 1977), pages 1–12.
- . "Patronage of Sixteenth-Century Architects by the Venetian Patriarchate." [Paper for conference] *Patronage in Renaissance Europe*. The Folger Institute of Renaissance and Eighteenth-Century Studies, Washington, D.C., May 20, 1977.
- Powell, Earl A., III. "Manierre Dawson's *Woman in Brown*." *Arts Magazine*, September 1976, pages 76–77.
- . "Morton Schanberg: The Machine as Icon." *Arts Magazine* May 1977, pages 122–123.
- Robison, Andrew. *Paper in Prints* [Exhibition catalogue] Washington, D.C.: National Gallery of Art, 1977.
- . [Reviews] *Piranesi: Etchings and Drawings*, by Roseline Bacou; and *Piranesi*, by Jonathan Scott. *The Print Collector's Newsletter*, volume 8, number 2 (May–June 1977), pages 48–49.
- Russell, H. Diane. [Review] *Les dessins de Stefano Della Bella*, by Françoise Viatte. *Art Bulletin*, September 1977.
- . "Reviews of Four Books on Venetian Drawings." *Master Drawings*, volume 14, number 3 (Autumn 1976).
- . "Walter Pater and John Addigton Symonds: A Raking View." [Paper for session] *Art and Homosexuality: Classical to Modern Times*. College Art Association of America, February 1977.
- Wheelock, Arthur K., Jr. *Perspective, Optics and Delft Artists around 1650*. New York: Garland Press, 1977.
- . "Gerard Houckgeest and Emmanuel de Witte: Architectural Painting in Delft." *Simiolus*, volume 8, number 3 (1975–1976), pages 167–185.
- . "Constantijn Huygens and Early Attitudes towards the Camera Obscura." *History of Photography*, volume 1, number 2 (1977), pages 93–103.
- . "De geschiedenis en bekoring van 'De Molen'." *De Kroniek van het Rembrandthuis*, volume 29, number 1 (1977), pages 20–32.
- . [Review] *Johannes Vermeer*, by Albert Blankert. *The Art Bulletin*, volume 59 (1977), pages 439–441.

APPENDIX 7. *Academic Appointments in Fiscal Year 1977*

Smithsonian Fellows pursue research problems in Smithsonian facilities and collections in collaboration with professional staff members.

SMITHSONIAN POSTDOCTORAL FELLOWS

Program in American and Cultural History

Alfred P. Hurley, Ph.D., Princeton University. History of the United States Air Force, with Forrest C. Pogue, Eisenhower Institute for Historical Research, from August 1, 1976, through July 31, 1977.

Warren B. Walsh, Ph.D., Harvard University. Impact of selected senior military colleges upon their graduates, especially their influence toward nonmilitary responses to problems of United States national security, with Forrest C. Pogue, Eisenhower Institute for Historical Research, from January 1, 1977, through June 30, 1977.

Program in Anthropology

M. James Blackman, Ph.D., Ohio State University. Study of the obsidian and "steatite" from Tel-e Malyan, Iran, with William W. Fitzhugh, Department of Anthropology, and Jacqueline S. Olin, Conservation Analytical Laboratory, from December 1, 1976, through November 30, 1977.

Claire M. Cassidy, Ph.D., University of Wisconsin. Historical analysis of character and distribution of New World Treponematoses, with Donald J. Ortner, Department of Anthropology, from September 1, 1976, through August 31, 1977.

Steven L. Cox, Ph.D., Harvard University. Analysis of Dorset Eskimo archeological collections from Southampton and Walrus Islands, N.W.T., Canada, with William W. Fitzhugh, Department of Anthropology, December 1, 1976, through November 30, 1977.

Loretta Fowler, Ph.D., University of Illinois. Historical development of Arapahoe political institutions, with John C. Ewers, Department of Anthropology, September 1, 1976, through August 31, 1977.

Program in Astrophysics

John Huchra, Ph.D., California Institute of Technology. Near-infrared photographic survey of the palactic plane on the 48" Schmidt, complementary to the Palomar Sky Survey; also a study of metal abundance in galaxies from emission lines; a study of variability of Seyfert galaxies; and the extension of theoretical models of galaxy evolution to systems with differing metal and helium abundances, with George Field, Smithsonian Astrophysical Observatory, from September 20, 1976, through September 20, 1977.

Charles Lada, Ph.D., Harvard University. Studies of interstellar cloud formation and star formation, with A. E. Lilley, Smithsonian Astrophysical Observatory, from July 1, 1976, through June 30, 1977.

Alan M. Levine, Ph.D., Massachusetts Institute of Technology. Research in X-ray astronomy, with Riccardo Giacconi, Smithsonian Astrophysical Observatory, from September 1, 1976, through August 31, 1977.

Mark J. Reid, Ph.D., California Institute of Technology. Studies in radio astronomy, with George Field, Smithsonian Astrophysical Observatory, from September 1, 1976, through August 31, 1977.

Program in Earth Sciences

R. John Knight, Ph.D., McMaster University, Ontario, Canada. A sedimentological and mineralogical study of selected basins of the Hellenic Trough in the eastern Mediterranean Sea, with Daniel J. Stanley, Department of Paleobiology, from December 1, 1976, through November 30, 1977.

Program in Environmental Sciences

Jozef Grabowski, Ph.D., Adam Mickiewicz University, Poland. Structure and function of phycobiliproteins and their natural complexes in the process of photosynthesis, with Elisabeth Gantt, Radiation Biology Laboratory from July 1, 1976, through June 30, 1977.

David W. Hopkins, Smithsonian-Eppley Fellow, Ph.D., University of California, San Diego. Solar energy in the ultraviolet and blue spectral regions and possible effects on plant growth and development caused by changes in environmental conditions, with William H. Klein, Radiation Biology Laboratory, from August 1, 1976, through July 31, 1977.

Merten H. Jabben, Ph.D., University of Freiburg, Germany. The action of phytochrome on the flowering response of wintex barley, with Gerald F. Dietzer, Radiation Biology Laboratory, from May 24, 1976, through April 30, 1977.

Douglas W. Mock, Ph.D., University of Minnesota. Nocturnal adaptations in neotropical night herons, with Eugene S. Morton, National Zoological Park, from September 1, 1976, through August 31, 1977.

Galen B. Rathbun, Ph.D., University of Nairobi, Kenya. Studies of the territorial and pair-bonding behaviors of captive *Elephantulus rufescens* (Macroscelididae) and the significance of scent marking, with John F. Eisenberg, National Zoological Park, from October 1, 1976, through September 30, 1977.

Rasanayagam Rudran, Ph.D., University of Maryland. The ecology and behavior of the red howler monkeys of Guatupo National Park in Venezuela, with John F. Eisenberg, National Zoological Park, from May 1, 1976, through April 30, 1977.

Stephen N. Turitzin, Ph.D., Stanford University. Foliage canopy architecture and the efficiency of solar energy capture by a salt-marsh ecosystem, with Bert G. Drake, Radiation Biology Laboratory, from November 15, 1976, through November 14, 1977.

Program in Evolutionary and Systematic Biology

Gregory D. Bentz, Ph.D., University of Pittsburgh. Postcranial adaptations in the osteology and myology of hummingbirds, with Richard L. Zusi, Department of Vertebrate Zoology, from September 1, 1976, through August 31, 1977.

Robert S. Carney, Ph.D., Oregon State University. Distribution and systematic affinities of Antarctic holothurians of the order Elaspoda Theel, with David L. Pawson, Department of Invertebrate Zoology, from November 1, 1976, through October 31, 1977.

Russell W. Graham, Ph.D., University of Texas, Austin. Pleistocene mammals of the Valsequillo fauna, Pueblo, Mexico, with Clayton E. Ray, Department of Paleobiology, from September 1, 1976, through August 31, 1977.

Gerardo Lamas, Ph.D., University of São Paulo, Brazil. Systematics and evolution of American Dismorphiinae, Danainae, and Ithomiinae, with William D. Field, Department of Entomology, from July 1, 1976, through June 30, 1977.

Jan J. Roth, Ph.D., University of Colorado. The parietal eye, an evolutionary approach to thermoregulation, with Nicholas Hotton III, Department of Paleobiology, from October 1, 1976, through September 30, 1977.

Program in the History of Art

Rena N. Coen, Ph.D., University of Minnesota. Coleridge's *Kubla Khan* and Cole's *Voyage of Life*, also Jacques-Louis David in the Wild West, with William H. Truettner, National Collection of Fine Arts, from September 1, 1976, through August 31, 1977.

Program in the History of Science and Technology

Joan Bromberg, Ph.D., University of Wisconsin. Impact of electrical technology and laboratory techniques upon the concepts of electromagnetism, 1840–1940, with Bernard S. Finn, Department of Science and Technology, from November 1, 1976, through October 31, 1977.

R. Douglas Hurt, Ph.D., Kansas State University. Agricultural technology and farmer organizations on the Great Plains, with John T. Schlebecker, Department of Industries, from June 15, 1976, through June 14, 1977.

Thomas F. Jaras, Ph.D., Georgetown University. Research on the impact of transoceanic submarine telegraphy on society, with Bernard S. Finn, Department of Science and Technology, from November 1, 1976, through May 31, 1977.

Program in Tropical Biology

John D. Cubit, Ph.D., University of Oregon. The effects of grazing on succession in marine algae, with Peter W. Glynn, Smithsonian Tropical Research Institute, from October 1, 1976, through September 30, 1977.

William E. Glanz, Ph.D., University of California, Berkeley. Community ecology of small mammals in Panama emphasizing arboreal species, with Nicholas D. Smythe, Smithsonian Tropical Research Institute, from January 1, 1977, through December 31, 1977.

David Janos, Ph.D., University of Michigan. The synecology of vesicular-arbuscular mycorrhizae, with Dr. Nicholas Smythe, from January 1 to May 1977.

Douglas W. Schemske, Ph.D., University of Illinois. A coevolutionary analysis of plant-animal interactions in the genus *Costus* (Zingiberaceae), with Robert L. Dressler, Smithsonian Tropical Research Institute, from January 1, 1977, through December 31, 1978.

SMITHSONIAN PREDOCTORAL FELLOWS

Program in American and Cultural History

Hazel D. Garcia, Ph.D. candidate, University of Wisconsin. Communications structure during the westward movement to Kentucky, 1769 to 1792, with Peter Marzio and Carl Scheele, Department of Applied Arts, from August 1, 1976, through July 31, 1977.

Hans L. Paeffgen, Ph.D. candidate, University of Michigan. The Berlin blockade and airlift—a study in Cold War diplomacy, with Forrest C. Pogue, Eisenhower Institute for Historical Research, from July 1, 1976, through June 30, 1977.

Steven J. Zeitlin, Ph.D. candidate, University of Pennsylvania. An analysis of the content and structure of the family story in America, with Robert H. Byington, Division of Performing Arts, from October 1, 1976 through September 30, 1977.

Program in Anthropology

Sara L. C. Bisel, Ph.D. candidate, University of Minnesota. The nutritional status of a Greek Bronze Age population, with J. Lawrence Angel, Department of Anthropology, from February 1, 1977, through September 30, 1977.

Miguel A. Pazos, University of San Marcos, Lima, Peru. Specialized training in archeological conservation emphasizing conservation and preservation of perishable archeological materials, with Clifford Evans, Jr., Department of Anthropology, from May 15, 1976, through August 15, 1976.

Jerome Schaefer, Ph.D. candidate, University of Arizona. Archeological investigations of a late Roman community in the Negev, with Gus W. Van Beek, Department of Anthropology, from September 1, 1976, through August 31, 1977.

Ann M. P. Shaw, Ph.D. candidate, Northwestern University. A study of short-term population dynamics in the American Southwest, with Douglas H. Uebelaker, Department of Anthropology, from August 1, 1976, through July 31, 1977.

Program in Astrophysics

Marc Aaronson, Ph.D. candidate, Harvard University. Infrared observations and stellar synthesis models of galaxies, with Giovanni Fazio, Smithsonian Astrophysical Observatory, from September 1, 1976, through May 31, 1977.

Scott E. Butler, Ph.D. candidate, Harvard University. Charge exchange calculations, radiative and collisional processes, with Alexander Dalgarno, Smithsonian Astrophysical Observatory, from September 1, 1976, through May 31, 1977.

Eric D. Feigelson, Ph.D. candidate, Harvard University. Research projects in extra-galactic and high-energy astrophysics, with Riccardo Giacconi, Smithsonian Astrophysical Observatory, from September 1, 1976, through May 31, 1977.

Jules P. Halpern, Ph.D. candidate, Harvard University. Imaging studies of soft X-ray objects with Riccardo Giacconi, Smithsonian Astrophysical Observatory, from September 1, 1976, through May 31, 1977.

Sten Odenwald, Ph.D. candidate, Harvard University. Comparative studies of giant Cd galaxies which are radio quiet and strong radio sources, with George

B. Field, Smithsonian Astrophysical Observatory, from September 1, 1976, through May 31, 1977.

Carleton R. Pennypacker, Ph.D. candidate, Harvard University. Research on galactic and extra-galactic objects which vary with speed in the infrared, with Costas Papaliolios, Smithsonian Astrophysical Observatory, from September 1, 1976, through May 31, 1977.

Stephen C. Perrenod, Ph.D. candidate, Harvard University. Evolution of hot gas in clusters of galaxies, with George B. Field, Smithsonian Astrophysical Observatory, from June 17, 1976, through December 17, 1976.

Ira M. Wasserman, Ph.D. candidate, Harvard University. Studies in gravitation theory and relativistic and high energy astrophysics, with George B. Field and S. Weinberg, Smithsonian Astrophysical Observatory, from June 1, 1976, through August 31, 1976.

Program in Environmental Sciences

Peter V. August, Ph.D. candidate, Texas Tech University. Population ecology of a tropical small-mammal community, with John F. Eisenberg, National Zoological Park, from June 15, 1976, through June 14, 1977.

Margaret A. O'Connell, Ph.D. candidate, Texas Tech University. Population ecology of neotropical rodents, with John F. Eisenberg, National Zoological Park, from June 15, 1976, through June 14, 1977.

Rebecca Gay Troth, Ph.D. candidate, University of Michigan. Field research on the problem of community distribution and dynamics of *Bombax ceiba* and its survival tactics, with Dan H. Nicolson, National Herbarium, from February 1, 1976, through January 31, 1977.

Program in Evolutionary and Systematic Biology

John B. Heppner, Ph.D. candidate, University of Florida. A revision of the North American Glyphipterygidae, with W. Donald Duckworth, Department of Entomology, from August 1, 1976, July 31, 1977.

Katherine M. Muzik, Ph.D. candidate, University of Miami. Systematics and zoogeography of Indo-Pacific octocorals, with Frederick Bayer, Department of Invertebrate Zoology, from June 1, 1976, through May 31, 1977.

Alan H. Savitsky, Ph.D. candidate, University of Kansas. The intergeneric relationships of xenodontine snakes, with George R. Zug, Department of Vertebrate Zoology, from July 1, 1976, through June 30, 1977.

David E. Schindel, Ph.D. candidate, Harvard University. Intrapopulational variability during changing environments—a case study of Pennsylvania gastropoda of the United States, with Ellis L. Yochelson, Department of Paleobiology, from February 15, 1976, through February 14, 1977.

John Utley, Ph.D. candidate, Duke University. Systematic studies of Thecophylloid *Vriesea* species (Bromeliaceae), with Lyman B. Smith, Department of Botany, from January 1, 1977, through December 31, 1977.

Program in the History of Art

L. Bruce Darling, Ph.D. candidate, University of Michigan. Development of Kumano Mandara paintings, especially the Kumano Miya Mandara, with Harold P. Stern, Freer Gallery of Art, from November 1, 1976, through April 30, 1977.

Mitchell D. Kahan, Ph.D. candidate, City University of New York. Subjective trends in American art in the 1930s, surrealism and magic realism, with Lois M. Fink, National Collection of Fine Arts and Cynthia J. McCabe, Hirshhorn Museum and Sculpture Garden, from November 1, 1976, through October 31, 1977.

Marc E. Krug, Ph.D. candidate, University of Chicago. A social realist vision of the Great Depression, with Joshua C. Taylor, National Collection of Fine Arts, from September 1, 1976, through May 31, 1977.

Melinda A. Lorenz, Ph.D. candidate, University of California, Santa Barbara. DeStijl theory and its relationship with American geometric abstraction, 1930–1950, with Lois M. Fink, National Collection of Fine Arts and Cynthia J. McCabe, Hirshhorn Museum and Sculpture Garden, from February 1, 1977, through September 30, 1977.

Miranda McClintic, Ph.D. candidate, New York University Institute of Fine Arts. Paintings of twentieth-century sculptor David Smith, with Joshua C. Taylor, National Collection of Fine Arts, from May 1, 1976, through April 30, 1977.

Harold B. Nelson, Jr., Ph.D. candidate, State University of New York, Binghamton. The image of the self and the other in the paintings and drawings of Romaine Brooks, with Adelyn Breeskin, National Collection of Fine Arts, from October 1, 1976, through August 31, 1977.

Patrick L. Stewart, Jr., Ph.D. candidate, University of Delaware. Precisionism—avant-garde and tradition in American art, 1915–1935, with Charles W. Millard III, Hirshhorn Museum and Sculpture Garden, from September 1, 1976, through July 31, 1977.

Gilbert T. Vincent, Ph.D. candidate, University of Delaware. Artistic perceptions of eighteenth-century America from 1870 to 1920, with Lois M. Fink, National Collection of Fine Arts, from September 1, 1976, through August 31, 1977.

Barbara A. B. Wolanin, Ph.D. candidate, University of Wisconsin. Arthur B. Carles, 1882–1952, Philadelphia colorist, with Inez Garson, Hirshhorn Museum and Sculpture Garden, from May 1, 1976, through October 31, 1977.

Program in the History of Science and Technology

David A. Hounshell, Ph.D. candidate, University of Delaware. The “American System” of manufacturing, 1850–1930, with Robert C. Post, Office of the Director of the Museum of History and Technology, from October 1, 1976, through September 30, 1977.

Allan A. Needell, Ph.D. candidate, Yale University. Max Planck’s contribution to the quantum theory, 1910–1917, with Paul Hanle, National Air and Space Museum, from September 1, 1976, through August 31, 1977.

John W. Servos, Ph.D. candidate, Johns Hopkins University. Kahlenberg and Noyes, an axis for development of physical chemistry in the United States, with Jon B. Eklund, Department of Science and Technology, from September 1, 1976, through August 31, 1977.

Program in Tropical Biology

Charlotte Gyllenhaal-Davis, Ph.D. candidate, University of Chicago. The effect of diversity of agricultural plant communities on the rate of loss of nutrients

from the ecosystem in slash-and-burn agriculture, with Dr. Olga Linares. July 1, 1976 to June 30, 1977.

Steven G. Hoffman, Ph.D. candidate, University of California at Santa Barbara. The sociobiology of two tropical reef fishes, with D. Ross Robertson, Smithsonian Tropical Research Institute, from February 1, 1977, through January 31, 1978.

Harilaos A. Lessios, Ph.D. candidate, Yale University. Evolutionary divergence of shallow-water sea urchins of the two coasts of Panama, with Roberta Rubinoff, Smithsonian Tropical Research Institute, from April 1, 1976, through March 31, 1977.

John Pickering, Ph.D. candidate, Harvard University. Reproductive strategies of the wasp, *Polistes canadensis*, with Donald Windsor, Smithsonian Tropical Research Institute, from June 1, 1976, through May 31, 1977.

VISITING RESEARCH STUDENTS

Program in American and Cultural History

Devon Miller, Yale University. An examination of the subject matter of the Harry T. Peters "America on Stone" collection of lithographs, 1830–1870, with Rodris Roth, Department of Cultural History.

Robert Rydell, University of California, Los Angeles. America's international expositions in the late nineteenth and early twentieth centuries—racial underpinnings of utopian artifacts, with Herman Viola, Department of Anthropology, and Wilcomb Washburn, Office of American Studies.

Deborah Schaefer, Texas Tech University. The history of taste as seen in the costume of political figures, with Margaret Klaphor, Department of National and Military History.

Program in Anthropology

Joseph Porter, University of Texas. Captain John G. Bourke, 1846–1896, and his role in the development of the Bureau of American Ethnology, the American Folklore Society, and the role of government in late nineteenth-century American science, with John Ewers, Department of Anthropology.

Program in Environmental Sciences

Pamela Clark, Clemson University. Mathematical modeling of biological processes, specifically concerning data collected on carbon dioxide exchange of vegetation as dependent upon light intensity, with Bert Drake, Radiation Biology Laboratory.

Kerry Malson, Virginia Polytechnic Institute and State University. Research on the development of techniques which will determine pasture forage production and utilization by exotic hoofstock, with Christen Wemmer, National Zoological Park's Conservation and Research Center.

Jeanne Roush, University of Oklahoma. Primate studies—social organization among the great apes, with Devra Kleiman, National Zoological Park.

Program in Evolutionary and Systematic Biology

Bruce Beehler, Princeton University. Compilation and analysis of data on altitudinal distribution of New Guinea forest birds, with George E. Watson, Department of Vertebrate Zoology.

Ralph Chapman, University of Rochester. An examination of character displacement in Cambrian ptychopariid trilobites, with Richard Grant, Department of Paleobiology.

Yenbutra Songsakdi, Chulalonghorn University, Thailand. Curatorial and systematic studies of museum mammal collections, with Richard W. Thorington, Jr., Department of Vertebrate Zoology.

Program in the History of Art

Diane Robbins, University of Michigan. Edith Halpert and the Downtown Gallery, with Garnett McCoy, Archives of American Art, and Judith Zilczer, Hirshhorn Museum and Sculpture Garden.

Program in the History of Science and Technology

Robert Block, University of California, Los Angeles. William John McGee, 1853–1912, a geographical analysis of an interdisciplinary scientist, with James Glenn and Herman Viola, Department of Anthropology.

Eda Fowlks, University of Minnesota. Study of auxiliary steam engine and locomotive devices and suspension bridges, with John White, Department of Science and Technology.

William Pretzer, Northern Illinois University. Technology and work culture in nineteenth-century American printing, with Elizabeth Harris, Department of Applied Arts.

Marc Stern, State University of New York, Stony Brook. The potters of Trenton, 1850–1890, with Susan Myers, Department of Cultural History.

Program in Tropical Biology

Susan Farabaugh, University of Maryland. Sources of selection on pair communication behavior of *Thryothorus* wrens in Panama, with Neal Smith, Smithsonian Tropical Research Institute.

HIRSHHORN MUSEUM AND SCULPTURE GARDEN INTERNS

Malcolm Daniel, Trinity College, Hartford. Research projects in the Education Department and general study of museum procedures, with Edward P. Lawson, Department of Education.

Deborah Fenton, Stanford University. Participation in museum activities in the educational and curatorial departments, with Edward P. Lawson, Department of Education.

Beatrice Kernan, Trinity College, Hartford. Research and curatorial work in the painting and sculpture departments, with Edward P. Lawson, Department of Education.

David Penney, New York University. Research and study in the educational and curatorial departments, with Edward P. Lawson, Department of Education.

Kimerly Rorschach, Brandeis University. Research and general study projects in the Education Department, with Edward P. Lawson, Department of Education.

NATIONAL COLLECTION OF FINE ARTS INTERNS

Lewis Kachur, Columbia University. Research for cataloguing modern graphics and paintings from the recent Woodward Foundation gift, with Lois M. Fink, Office of Research and Professional Training.

Jan Lendman, University of Buffalo. Work on post-tour booklet for elementary school teachers who have led groups touring the Museum, with Peter Bermingham and Margery Gordon, Office of Education.

Kim Sichel, Brown University. Work with exhibitions staff installing summer shows at the National Collection and at the Renwick Gallery, with David Keeler, Office of Exhibition and Design.

VISITING UNDERGRADUATE STUDENTS

Victoria Page, Northern Virginia Community College. Sorting and identifying marine nematodes, with W. Duane Hope, Department of Invertebrate Zoology.

Debra Ann Rudik, Gallaudet College. Research and instruction in archival studies, with Richard Lytle, Smithsonian Archives.

Jil Swearingen, Northern Virginia Community College. Preparing leaf specimens by leaf-clearing process, research on leaf families, and study of leaf architectural features, with Leo Hickey, Department of Paleobiology.

SMITHSONIAN VISITING SCHOLAR

Mahdokht Javidpour, Belgrade University, Yugoslavia. Study of Gastropoda, with Norman F. Sohl and Ellis Yochelson, Department of Paleobiology, from November 15, 1976, through January 15, 1977.

SMITHSONIAN MUSEUM INTERN

Tjako Singleton Mpulubusi, National Museum and Art Gallery, Gaborone, Botswana. Cataloguing ethnographic material; conserving and repairing ethnographic material; registration; storage; exhibition techniques including photography, model-making, lighting, and preparation of labels using silk-screen and lettraset, with William Fitzhugh, Department of Anthropology, and Eugene Behlen, Department of Exhibits, from April 1, 1976, through March 31, 1977.

NATIONAL ZOOLOGICAL PARK PROFESSIONAL INTERN

Suzanne Kennedy, Michigan State University. Intern in exotic animal medicine, with Dr. Mitchell Bush, Office of Animal Health, from June 1, 1976, through September 1, 1977.

NATIONAL COLLECTION OF FINE ARTS MUSEUM FELLOW

Virginia F. Butera, Johns Hopkins University. Research and study of the different aspects and functions of the various departments at the National Collection of Fine Arts, with Patricia Chieffo, Office of Research and Professional Training, from September 1, 1976 through July 31, 1977.

MUSEUM STUDY STUDENTS

James S. Berkman, Harvard University. Research for the preparation of annotations for volume three of the Joseph Henry Papers, with Arthur Molella, Assistant Editor, Joseph Henry Papers.

Bruce Craig, George Washington University. Assisting the Anthropology Department Information Specialist answering letters and doing research on inquiries from the public, with Ruth Selig, Department of Anthropology.

Vicki Enerson, Carroll College. Study of all phases of graphic production techniques and practices, with Joseph W. Saunders, Office of Exhibits Central.

Richard H. Eftim, University of Massachusetts. Projects in collections management and specimen preparation, with Frederick Collier, Department of Paleobiology.

Kenneth Fannelli, American University. Studies in cataloguing, indexing, and interpreting historical manuscripts relating to nineteenth-century American science and culture, with Arthur P. Molella, Assistant Editor, Joseph Henry Papers.

Josephine Ferrugia, University of Maryland. Research on the history of Rock Creek Cemetery and the history of rural cemeteries, with James Goode, Curator, Smithsonian Institution Building.

Sarah L. Henderson, Lake Forest College. Study in museum registration techniques; orientations in the fields of textile analysis, conservation of museum objects, techniques of exhibit presentation; and research in the libraries and the National Archives, with Donald Kloster, Department of National and Military History.

Alison Herlihy, University of California, Berkeley. Research at Smithsonian Libraries and at the Library of Congress for historical material to be used in annotations for the Papers of Joseph Henry, with Marc Rothenberg, Assistant Editor, Joseph Henry Papers.

Stephanie Higgins, Scripps College. Work as house manager for the Puppet Theatre and assistant house manager for the winter concert series and box-office assistant for both, with B. C. May, Division of Performing Arts.

W. Joy Hughes, George Fox College. Studies to learn skills and procedures needed to make the Division of Performing Arts function, with Suzanne Roschwalb, Division of Performing Arts.

Nancy Kessler, Skidmore College. Assisting in the preparation of a major museum exhibit, learning exhibits production techniques and practical exhibits techniques, with Edith Mayo and Herbert Collins, Department of National and Military History.

Peggy Levere, Wellesley College. Social and architectural research on various public and private demolished buildings, with James Goode, Curator, Smithsonian Institution Building.

Julia McCoy, American University. Research relating to the cultural and architectural history of prominent demolished Washington, D.C., buildings, with James Goode, Curator, Smithsonian Institution Building.

James McNally, New York University. Researching, collating, and describing the data sources that relate to the changes resulting from the Immigration and Nationality Act of 1965, with Roy S. Bryce-Laporte, Research Institute for Immigration and Ethnic Studies.

David Moin, State University of New York at Binghamton. Work with the Smithsonian News Bureau, with Gerald Lipson, Office of Public Affairs.

Kimberly Morris, University of Pittsburgh. Work as assistant to fellows in the Woodrow Wilson Center; participation in active functions of Office of International Programs and Office of Seminars and Symposia, with Zadnek David, Woodrow Wilson Center for International Scholars; Kennedy Schmertz, Office of International Programs; and Wilton Dillon, Office of Seminars and Symposia.

Brenda Ray, Emma Willard School. Conservation and restoration of Southwest American Indian pottery collection and also a fit study of tibia from bison antiquus from a Colorado site, with Jane Norman and Dennis Stanford, Department of Anthropology.

Christine Reese, University of Pennsylvania. Research assistant for the development of the Roots of Civilization Hall at the Museum of Natural History, with Robert K. Evans, Department of Exhibits.

Sue Rudo, American University. Research on the cultural and architectural history of prominent buildings in Washington, D.C. which have been demolished, with James Goode, Curator, Smithsonian Institution Building.

Jane Saginaw, University of California, Berkeley. Assisting with the survey of collections and selection of specimens and with the development of exhibit planning and script writing for the Old World Archaeology exhibit, with Robert K. Evans, Office of Exhibits.

Gary Smith, The Lindenwood Colleges. Study to gain practical experience in marionette theatre production including manipulating the marionettes, lighting, sound, construction, setting up budget, initial financing, advertising, and booking, with Phyllis Nierendorf, Nicolo Marionette Company, Division of Performing Arts.

Kathleen Spudis, University of North Carolina. Study in museum registration techniques, conservation of museum objects, techniques of exhibit presentation, and research in the libraries and in the National Archives, with Donald Kloster, Department of National and Military History.

Lisa A. Wagner, University of Massachusetts. Research on African weapons from Belgian Congo in order to identify them, with Gordon Gibson, Department of Anthropology.

Larisa Wanserski, Northwestern University. Assisting in ongoing aspects of publicity and promotion of programs sponsored by the Division of Performing Arts, including press release and program note composition, writing copy for newsletter, and general assistance, with Suzanne Roschwalb, Division of Performing Arts.

*NATIONAL ZOOLOGICAL PARK MANAGEMENT,
HEALTH AND RESEARCH STUDENTS*

Animal Health

Mark Goldstein, Cornell University
Jay Gould, Cornell University
Eileen Hathaway, University of Pennsylvania
Lynn Kramer, Ohio State University

Animal Collection Management

Thomas E. Keefer, University of Texas

Zoo Education, Exhibits and Graphics

Diana Kwong, Scripps College

Pathology

Richard H. Bruner, Armed Forces Institute of Pathology
Tessa Bunnag, George Washington University
Glenn Crystal, George Washington University
David J. Donofrio, Armed Forces Institute of Pathology
Michael Gross, George Washington University

Margaret Mitchell, Washington Technical Institute
Elizabeth Neely, Blue Ridge Community College
Leopoldo Paasch, George Washington University
Page Perry, National Cancer Institute
John M. Pletcher, Armed Forces Institute of Pathology
Robin Townsend, George Washington University
Robert C. Trucksa, Armed Forces Institute of Pathology

Wildlife Conservation

Joel Bradburne, Warren County High School
Chantel Cohen, Goddard College
Louanne DiPalma, Patterson College
Kerry Malson, Virginia Polytechnic Institute and State University
Susan Merritt, Mount Holyoke College
Andrea Smith, Patterson College

Zoological Research

Charles Brady, Ohio University
R. Penn Chu, University of Maryland
Todd Davis, George Washington University
A. Lang Elliott, University of Maryland
Susan Farabaugh, University of Maryland
Rebecca Field, Johns Hopkins University
Kenneth Green, Johns Hopkins University
Bruce Groff, University of Maryland
Robert Hoage, University of Pittsburgh
William Principe, New Mexico State
Steve Ralph, University of Washington
Elizabeth Scheibel, Mount Holyoke College
Christine Schonewald, University of Maryland
Susan Wilson, Free University
Paul Woodward, University of Maryland

*CHESAPEAKE BAY CENTER FOR ENVIRONMENTAL STUDIES
WORK/LEARN STUDENTS*

Douglas Allchin, Bucknell University. Upland Plant Ecology, Dr. Dennis Whighan.

Robert Baker, University of Maine. Outdoor Environmental Education Curriculum Development, Dr. John Falk.

David Nash Collier, University of North Carolina. Estuarine Molluscan Fauna, Mr. Robert Cory.

Mark Jansen, University of California, Santa Cruz. Chemistry of Air-Water Interface, Dr. David L. Correll.

Jeannine Koshear (2 terms), University of California, Santa Cruz. Structure and Function of Communities of Terrestrial Vertebrates and Anthropods, Dr. James Lynch.

Bruce Louks, University of California at Davis. Estuarine Microbiology,

Sharon Maves (3 terms), University of California at Berkely. Outdoor Environmental Education Curriculum Development, Dr. John Falk.

Jim Mills, Earlham College. Structure and Function of Terrestrial Animal Communities, Dr. James Lynch.

Douglas Reece, University of Missouri at Columbia. Structure and Function of Terrestrial Animal Communities, Dr. James Lynch.

Patricia Valentine (2 terms), Barnard College. Psychological Effects of Outdoor Experiences, Dr. John Balling.

Mark Whiting, Utah State University. Attached Diatom Communities on Higher Aquatic Vascular Plants, Dr. Maria Faust.

SMITHSONIAN TROPICAL RESEARCH INSTITUTE
SHORT-TERM FELLOWSHIPS IN TROPICAL BIOLOGY

The Edward John Noble Foundation

Mark Bertness, University of Maryland

William Cade, University of Texas

Phyllis Coley, University of Chicago

Holly Downing, Smith College

Hugh Drummond, University of Tennessee

Christina Dubov, San Francisco State University

Herbert Kaufman, John Hopkins University

Harilaos Lessios, Yale University

Marcia Litte, Cornell University

Deedra McClearn, Harvard University

Nicholas Volkman, State University of New York

Kentwood Wells, Cornell University

EXXON Corporation

Tania Beliz, Universidad de Panamá

César Benalcázar, Universidad del Valle, Cali, Colombia

Fabiola Silva, Universidad del Valle, Cali, Colombia

Patricia Chacón, Universidad del Valle, Cali, Colombia

Milton Clark, Universidad de Panamá

Vielka Quintero, Universidad de Panamá

Rafael Rivera, Universidad de Panamá

Ibero Sarmiento, Universidad de Panamá

Juan del Rosario, Universidad de Panamá

Henry B. and Grace Doherty Foundation

Eric Fischer, University of California, Berkeley

Peter Pressley, University of British Columbia, Canada

Ronald Thresher, University of Miami

APPENDIX 8. *Benefactors of the Smithsonian Institution
In Fiscal Year 1977*

As a trust instrumentality of the United States, the Smithsonian Institution has received federal support since it was established in 1846 to carry out the terms of James Smithson's will. Appropriated funds have long provided important additions to the trust funds, donated by Smithson and subsequent benefactors, to enable the Institution to carry out its responsibilities for research and exhibition of the national collections and maintenance of the valuable objects and records of science, history, and culture entrusted to the Institution.

The Smithsonian's basic trust funds have provided the Institution with the element of flexibility and independence essential to its creative, innovative growth. Trust funds traditionally have made possible many of the research, acquisition, and educational programs which are central to the Smithsonian's present resources and achievements.

The Smithsonian is extremely grateful to the foundations, corporations, and individuals listed below for their gifts and bequests and contributing memberships in the Smithsonian Associates.

GIFTS AND BEQUESTS TO THE SMITHSONIAN

\$100,000 or more:

Anonymous	S. C. Johnson & Son, Inc.
The Morris and Gwendolyn Cafritz Foundation	The Andrew W. Mellon Foundation

\$10,000 or more:

American Commercial Barge Line Company	Dr. and Mrs. Herbert E. Hawkes
Anonymous	Mrs. James Stewart Hooker
The Arcadia Foundation	Janet A. Hooker Charitable Trust
Ashland Oil, Inc.	International Council for Bird Preservation
The Brown Foundation	Estate of Grover Loening
Mrs. Helen W. Buckner	Mr. Richard Manoogian
CBS Foundation, Inc.	The Charles E. Merrill Trust
Peter C. Cornell Trust	Milliken Foundation
Crowley Maritime Corporation	Mobil Oil Corporation
Doubleday & Company, Inc.	National Geographic Society
The Eppley Foundation for Research	New York State Council on the Arts
EXXON Corporation	Edward John Noble Foundation
Max C. Fleischmann Foundation	Mr. and Mrs. Ralph C. Rinzler
The Ford Foundation	Mr. and Mrs. S. Dillon Ripley

\$10,000 or more—continued

Rockefeller Brothers Fund	Dr. and Mrs. Jeremy P. Waletzky
The Rockefeller Foundation	DeWitt Wallace Fund, Inc.
The Ruth and Vernon Taylor Foundation	Mr. Thomas J. Watson, Jr.
The Tinker Foundation Incorporated	The Weatherhead Foundation
The Tobacco Institute, Inc.	Matilda R. Wilson Fund
Union Mechling Corporation	World Wildlife Fund

\$1,000 or more:

Miss Janice M. Aime	Mrs. Gertrude Helen Fay
Amax Foundation, Inc.	Finlay Department
American Can Company	Benson & Edith Ford Fund
American Institute of Marine Underwriters	Eleanor Clay Ford Fund
American Ornithologists Union	Mr. S. S. Forrest, Jr.
American Society of Interior Design Educational Foundation	Sumner Gerard Foundation
Amos Press, Incorporated	Dr. Gordon Gibson
Anonymous	Gladders Barge Line, Inc.
Mrs. Evelyn F. Bartlett	Evan Gebhard Gourgau Foundation
The Bass Foundation	Mr. Charles A. Greenfield
Bath Iron Works Corporation	The Griffis Foundation, Inc.
Mrs. Patricia D. Beck	Mr. R. Philip Hanes, Jr.
Mr. David P. Becker	Harcourt Brace Jovanovich, Inc.
Mrs. Betty L. Bergman	Mr. Louis W. Hill, Jr.
Edith C. Blum Foundation	Mr. George W. Hilton
Book of the Month Club	The Hoffman-LaRoche Foundation
Mrs. John L. Bradley	Mrs. Everett T. House
Burlington Industries Foundation	Ingram Barge Company
Butterick Fashion Marketing Company	Interdisciplinary Communication Associates, Inc.
Canal Barge Company, Inc.	The Island Foundation
Cargo Carriers, Incorporated	Mrs. Ronald D. Jeancon
Chevron Chemical Company	Mr. and Mrs. Gilbert H. Kinney
CIBA-GEIGY Corporation	Coe-Kerr Gallery, Inc.
Classical America	Samuel H. Kress Foundation
Colt Industries Charitable Foundation, Inc.	The Lauder Foundation
Copernicus Society of America	Mr. Howard Lipman
Mr. and Mrs. John A. Corroon	S. C. Loveland Co., Inc.
Mr. and Mrs. Ron Dante	The Magowan Family Foundation, Inc.
Mr. and Mrs. F. Arnold Daum	Mrs. Robert A. Magowan
Diamond Shamrock Corporation	The Marriott Foundation
Mr. David Dibner	Mr. and Mrs. William Marsteller
Dillingham Corporation	Brooks and Hope B. McCormick Foundation
Dixie Carriers, Inc.	McDonald's Corporation
The Henry L. and Grace Doherty Charitable Foundation, Inc.	McGregor Fund
Dow Chemical U.S.A.	Dr. and Mrs. A. Melamed
The Charles Engelhard Foundation	Mr. Paul Mellon
Mrs. Sarah G. Epstein	Michigan Council for the Arts
EXXON Company, U.S.A.	The Midgard Foundation
	Mrs. Margaret Carnegie Miller
	Morey Machinery, Inc.

\$1,000 or more—continued

Mr. and Mrs. Thomas B. Morgan	Miss Elsie Shaver
The National Needlework Association	Mr. Sidney Singer, Jr.
The Ohio River Company	Steelcase, Inc.
The Ohrstrom Foundation	Miss Elizabeth Stein
Peretz Fund of the Combined Jewish Philanthropies of Greater Boston, Inc.	Steinway & Sons
Ellis L. Phillips Foundation	St. Joe Minerals Corporation
The Pioneer Foundation	The Florence Louchheim Stol Foundation
Polaroid Foundation, Inc.	The Stroh Brewery Company
The Quaker Oats Company	Stroheim & Romann
Rachelwood Foundation	Mr. John S. Thacher
Ralston Purina Trust Fund	The Valley Line Company
Mr. David Rockefeller	Mr. Richard W. Weatherhead
Mr. John D. Rockefeller	The Ellen Bayard Weedon Foundation
Governor Nelson A. Rockefeller	Mr. and Mrs. Lewis A. Weeks
Arthur Ross Foundation	Wenner-Gren Foundation
Schering Corporation	Weyerhaeuser Company
Mrs. Gertrude Schweitzer	The Wyeth Endowment for American Art
Scripps Institution of Oceanography	

\$500 or more:

American Philosophical Society	Mrs. Amy E. Higgins
Anonymous	Miss Milka Iconomoff
Mr. Henry Arnhold	IU International
Mr. and Mrs. Stuart B. Avery	The JDR 3rd Fund
Mr. Barry Bingham, Sr.	Estate of Charles A. Lindbergh
Mr. Stephen Brickel	Mr. Donald B. Marron
Dr. G. Arthur Cooper	Mr. and Mrs. John Mayer
Corning Glass Works Foundation	Mrs. Margaret D. McKee
Mr. G. G. Cornwell	Mrs. Constance L. Mellen
Mrs. Priscilla Cunningham	National Audubon Society
Mrs. Rita M. Cushman	Mr. David L. Pearson
Joseph C. Domino, Inc.	Mr. Sidney N. Shure
General Electric Company	United States Postal Service
GF Business Equipment, Inc.	Upper Mississippi Towing Corporation
Mrs. Carol Guyer	Mrs. Edward P. Williams
Estate of Lazaar Henkin	Miss Mary Knowles Wisner
Miss Ruth L. Hewitt	

We also gratefully acknowledge other contributions in excess of \$100,000 received from approximately 1,100 contributors in 1977.

SMITHSONIAN ASSOCIATES • CONTRIBUTING MEMBERS

The Contributing Members of the Smithsonian National Associates support the Institution's work through annual contributions of \$50, \$100, and \$500. In the past year the contributing membership doubled from 885 to 1,616 and maintained a renewal rate of 85 percent.

The James Smithson Society was created in 1977 to encourage and recognize major gifts to the Smithsonian Institution. This Society, which is the highest order of the Contributing Membership in the Smithsonian Associates, is comprised of two membership categories. Annual members are individuals who make unrestricted contributions of \$1,000 to \$24,999 annually. Life Members are those who give \$25,000 or more either in monetary gifts or additions to the collections.

The Smithsonian Institution gratefully acknowledges the generous support of the James Smithson Society Charter members, 1977 Life members, and the Contributing Members of the Smithsonian Associates.

JAMES SMITHSON SOCIETY

Life Members

GOLD MEDALISTS

Mr. and Mrs. Gerald M. Best	Mr. and Mrs. Edmund C. Monell
Mr. and Mrs. Leigh B. Block	Judge and Mrs. G. Burton Pearson
Mr. Thomas M. Evans	Mr. and Mrs. John Paul Remensnyder
Mr. and Mrs. Joseph H. Hirshhorn	Dr. and Mrs. Hans Syz
Mr. and Mrs. John A. Logan	Mr. Barry Yampol

SILVER MEDALISTS

Mr. and Mrs. Louis Kaufman	Dr. David Landau
----------------------------	------------------

BRONZE MEDALISTS

Mr. Duncan L. Edwards	Mr. and Mrs. Abraham Rattner
Mr. and Mrs. Don C. Harrold	Mr. and Mrs. Ralph C. Rinzler
Mr. and Mrs. Jacob Kainen	Mr. and Mrs. Morton Silverman

Annual Members (\$1,000 and above)

Mr. and Mrs. William S. Anderson	Mr. and Mrs. George P. Caulkins, Jr.
The Honorable and Mrs. Walter H. Annenberg	Mr. and Mrs. Robert Horne Charles
Mrs. Evelyn Bartlett	Mr. and Mrs. Walker L. Cisler
Mr. and Mrs. Harry Hood Bassett	Mr. and Mrs. Richard P. Cooley
Mr. Henry C. Beck, Jr.	Mr. Marshall B. Coyne
Mrs. Henry C. Beck, Jr.	Miss Louise Crane
The Honorable and Mrs. Ralph E. Becker	Mr. Kenneth M. Crosby
Mrs. Harry Payne Bingham	Mr. Joseph F. Cullman III
Mr. and Mrs. A. Smith Bowman	Mr. and Mrs. Leo Daly III
Mr. and Mrs. DeLong Bowman	Mr. and Mrs. Justin Dart
Mr. and Mrs. John Adams Bross	Mrs. Kathryn W. Donaldson
Mr. Keith S. Brown	Mr. and Mrs. J. C. Donnell II
Mrs. Keith S. Brown	Mr. and Mrs. Gaylord Donnelley
The Honorable and Mrs. Philip W. Buchen	Mr. John T. Dorrance, Jr.
Major General and Mrs. Daniel J. Campbell	Mr. and Mrs. Morton Downey
	Mrs. Dorothy D. Eweson
	The Honorable John Clifford Folger
	Mrs. John Clifford Folger
	Mr. and Mrs. Alfred C. Glassell, Jr.

Annual Members—continued

Mr. Jerome L. Greene	The Honorable and Mrs. Daniel Parker
Mr. John Bradley Greene	The Honorable and Mrs. Jefferson Patterson
Mrs. John Bradley Greene	Mr. and Mrs. George S. Pillsbury
Mr. and Mrs. Gilbert C. Greenway	Mr. and Mrs. Louis F. Polk
Mr. and Mrs. William H. Greer, Jr.	The Honorable Frederick W. Richmond
Dr. and Mrs. Armand Hammer	Dina Merrill Robertson
Mr. and Mrs. William L. Hanley	Mr. John J. Robertson
Mrs. W. Averell Harriman	Dr. and Mrs. Milton L. Rock
John and Lucia Heard	Mr. and Mrs. William R. Salomon
Mr. and Mrs. Robert R. Herring	Mr. and Mrs. B. Francis Saul II
The Honorable and Mrs. Frank N. Ikard	Miss Ottilie Schillig
Mr. and Mrs. George H. Jacobus	Mr. and Mrs. Arthur A. Seeligson, Jr.
Mr. and Mrs. George Frederick Jewett, Jr.	Dr. and Mrs. James H. Semans
Mr. and Mrs. H. Warren Kampf	Mr. and Mrs. William M. Siegel
The Honorable and Mrs. W. John Kenney	Mr. David G. Skinner
Mr. and Mrs. Gilbert Hart Kinney	Mr. and Mrs. C. Grove Smith
The Honorable and Mrs. Philip M. Klutznick	The Honorable and Mrs. Gerard C. Smith
Mr. and Mrs. Harold F. Linder	Mrs. Edith C. Steinbright
Mr. and Mrs. Robert A. Magowan	Miss Marilyn L. Steinbright
Mr. and Mrs. Leonard H. Marks	Mrs. Gardiner Symonds
The Honorable and Mrs. William McChesney Martin, Jr.	Mr. Franz G. Talley
The Honorable and Mrs. George C. McGhee	Mrs. Franz G. Talley
The Honorable and Mrs. Robert M. McKinney	Mr. and Mrs. Vernon F. Taylor, Jr.
Mr. and Mrs. Henry S. McNeil	Mr. and Mrs. George E. Tener
Dr. and Mrs. Ruben F. Mettler	The Honorable and Mrs. Clark W. Thompson
Mrs. Clifford Michel	Mr. and Mrs. Wynant Davis Vanderpool
Mr. and Mrs. John D. Murchison	Mr. and Mrs. C. Woods Vest, Jr.
Dr. Josephine L. Murray	Mr. and Mrs. Thomas J. Watson, Jr.
The Honorable and Mrs. Paul H. Nitze	Mr. and Mrs. Benjamin Welles
Mr. Ricard R. Ohrstrom	Mr. and Mrs. Brayton Wilbur, Jr.
	Mr. and Mrs. Morton H. Wilner
	Mr. James O. Wright
	His Excellency Ardeshir Zahedi

SUSTAINING MEMBERS (\$500 and above)

Mr. George H. C. Arrowsmith	Mr. and Mrs. Mandell J. Ourisman
Mr. Richard Lee Birchler	Ms. Deborah L. Perry
Mr. Alfred P. Brooks	Mr. and Mrs. Paul Roberts
Ms. Frances Sells Doss	Mr. and Mrs. Page W. Smith
Mr. Atwater Kent	Mr. Marshall Steele
Mr. F. M. Kirby	Mrs. Arthur H. Sulzberger
J. A. MacDonald Foundation	Miss Cecile G. Timolat
Mr. Leroy W. Mink	Mrs. Noam D. Zelman
Mr. and Mrs. Robert N. Minutillo	

DONOR MEMBERS (\$100 and above)

- Mr. and Mrs. Stanley N. Allan
Mr. Woodley Allen
Mrs. Elizabeth G. Amory
Mr. and Mrs. David R. Anderson
Mr. and Mrs. E. B. Anderson
Mr. Emmett D. Anderson
Mr. Joseph R. Anderson
Mr. Myron Anderson
Mr. and Mrs. R. S. Antes
Mr. John D. Archbold
Mr. Fred C. Babcock
Mr. and Mrs. Morton W. Bachrach
Mr. Alan Baer
Mr. and Mrs. Smith Bagley
Mr. John E. Baker
Mr. Warren Baker
Lieutenant General and Mrs.
Earl W. Barnes
Mr. and Mrs. Charles L. Bartlett
Mr. and Mrs. John Bartlett
Ms. Lucille Bass
Mr. and Mrs. J. Pat Beaird
Mr. and Mrs. Walter Beck
Colonel and Mrs. George C. Berger
Mr. and Mrs. John H. Bernard
Mr. and Mrs. Seymour Bernett
Mr. and Mrs. Steven Bershader
Dr. and Mrs. E. A. Bestard
Mr. H. Harold Bishop
Mr. and Mrs. Donald Eric Black
The Honorable and Mrs. Robert O.
Blake
Mr. and Mrs. D. H. Blumberg
Mr. and Mrs. J. B. Bogan
Mr. and Mrs. Mel H. Bolster
Ms. Joan V. Bonk
Mr. and Mrs. F. Borowsky
Mr. and Mrs. John Boyd
Mr. Maxwell Brace
Miss Eugenie Rowe Bradford
Mr. and Mrs. Glenn M. Branch
Mr. J. Bruce Bredin
Dr. and Mrs. S. B. Brinkley
Mr. F. Carroll Brown
Mr. and Mrs. Frederick B. Bryant
Mr. and Mrs. C. W. Buhler
The Honorable and Mrs.
William A. M. Burden
Mr. and Mrs. I. Townsend
Burden III
Mrs. Jackson Burke
Mrs. Julia T. Burlen
Mr. and Mrs. Harry W. Burns
Dr. and Mrs. J. A. Burwell
Mr. Marion B. Busch
Mr. E. T. Byram
Mr. and Mrs. James M. Byrne
Dr. and Mrs. Charles M. Cabaniss
Dr. G. W. Cage
Mrs. Eleanor Rixson Cannon
Dr. Francis Caponegro, Jr.
Mr. William I. Cargo
Mr. and Mrs. Leo A. Carten
The Honorable and Mrs. Henry E.
Catto, Jr.
Ms. Priscilla M. Christy
Mr. Blake Clark
Mr. and Mrs. Jerald L. Clark
Captain and Mrs. Richard Cobb
Mr. and Mrs. Douglas W. Coffey
Colonel and Mrs. Russell C. Coile
Mr. and Mrs. A. R. Colon
Dr. George W. Conner
Mr. Leonardo Contardo
Mr. and Mrs. J. A. Corbet
Ms. Patricia d w Counts
Mr. and Mrs. David M. Crabtree
Mr. Stephen F. Crum
Mr. and Mrs. Alan M. Dachs
Mr. and Mrs. Keith Davis
Ms. Caroline de Weinberg
Mr. and Mrs. Joseph E. Dean
Mr. and Mrs. David R. Dear
Mr. Hal P. Demuth
Dr. and Mrs. Lewis Hilliard Dennis
General Jacob L. Devers
Mr. and Mrs. John Doherty
Mr. George Arntzen Doole
Mr. Alden Lowell Doud
Dr. Joseph S. Drage
Mr. Wilson A. Draughon
Mrs. Helen Jean Arthur Dunn
Mr. Lawrence A. Ehrhart
Mr. George M. Elsey
Ms. Ann E. Erdman
Mr. and Mrs. John G. Esswein
Mr. and Mrs. James G. Evans, Jr.
Colonel and Mrs. J. J. Felmley
The Honorable William H. Fitzgerald
Mr. Julius Fleischman
Mr. Robert W. Fleming
Mr. and Mrs. M. K. Fleschner
Mr. David Fogelson
The Honorable and Mrs. Edward Foley
Mr. Richard E. Ford
Mr. Earl M. Foreman
Miss Helen E. Forshier
Ms. Perry J. Frank

Donor Members—continued

Mrs. J. E. A. Freeman
Mrs. Rowland G. Freeman
Mr. M. C. Freudenberg
Mr. and Mrs. Arthur H. Fribourg
Mr. William C. Frogale
Mr. and Mrs. Geoffrey S. Fuller
Mr. and Mrs. Arthur W. Gardner
Mr. T. Jack Gary, Jr.
Mr. Barry K. Gibson
Mr. and Mrs. T. K. Glennan
Mr. and Mrs. Henry H. Goldberg
Colonel and Mrs. Julius Goldstein
Mrs. Adolph Gottlieb
Mrs. Bette C. Graham
Mrs. Katharine Graham
Mr. Lloyd Graham
Captain and Mrs. C. A. Grandjean
Dr. Sheila H. Gray
Mr. and Mrs. John H. Groth
Mr. and Mrs. Kenneth M. Grubb
Mr. Joseph Guilietti, Jr.
Mr. John F. Gunnell
Mr. and Mrs. Alvin Guttag
Mr. and Mrs. Walter Haas
Mr. John L. Hafenrichter
Mr. and Mrs. Ernest V. Hallberg, Jr.
Ms. Cynthia Hanby
Mr. Gordon Hanes
Ms. Morella R. Hansen
Mrs. Philip A. Hart
Mr. Thomas Hays
Mr. and Mrs. Patrick Healy III
Ms. Judith B. Heimann
Ms. Alverne S. Hellenthal
Mr. Ralph D. Helwig
Mr. Jeffrey L. Hendry
Ms. Genevieve Henning
Ms. Nona G. Herndon
Mr. George S. Heyer, Jr.
Mr. Robert A. Hicks
Mr. Alan R. Hill
Dr. J. D. Hills
Mr. and Mrs. Robert M. Hinton
Mr. and Mrs. L. Hoffman
Mr. E. Robert Hofsas
Mr. and Mrs. John B. Holden
Mr. William E. Horn
Mr. Arthur A. Houghton, Jr.
Mr. and Mrs. James H. Hughes
Mr. R. Bruce Hunter
Mr. and Mrs. William R. Hunter
Mr. Claude D. Hurd
Mr. and Mrs. F. Irving Hutchings
Mrs. S. T. English
Dr. Glenn James
Mr. J. Ruskin Jelks, Jr.
Mr. David B. Jenkins
Mr. James L. Johnson
Colonel and Mrs. F. M. Johnson, Jr.
Ms. Anne Kaufman
Mr. Daniel C. Kaye
Mr. Peter M. Kehoe
Mrs. George C. Keiser
Mr. Stephen D. Kelly
Mr. Harris L. Kempner
Mr. Walter H. Kidd
Mr. Charles T. Kindsvatter
Dr. Harold King
Dr. H. Kingsberry
Mr. Edgar P. Kirsopp
Mr. and Mrs. J. K. Knee
Mr. Michael J. Koliss
Mr. Laurence E. Korwin
Mr. Barton Krawetz
Mr. and Mrs. A. Scheffer Lang
Mr. and Mrs. Anthony A. Lapham
Dr. and Mrs. K. C. Latven
Mr. Robert F. Law
Ms. Candie C. W. Lee
Mr. Edward L. Lembitz
The Honorable and Mrs.
Edward H. Levi
Mr. and Mrs. Arthur Levine
Dr. C. P. Lewis, Jr.
Mrs. Katherine H. Lloyd
Mr. and Mrs. Walter Loewenstern, Jr.
Mr. and Mrs. James P. Londergan, Jr.
Mr. Benjamin H. Long
Mrs. John E. Long
Mrs. Edward Macauley
Mr. Anthony J. Maciorowski
Mrs. J. Noel Macy
Mr. and Mrs. Richard R. Mahlke
Mr. and Mrs. Paul Mannes
Mr. and Mrs. Larry B. Marton
Mr. and Mrs. Robert F. Maxwell
Mr. Michael E. Mazer
Mr. and Mrs. Terence McAuliffe
Mr. Donald L. McCathran
Mr. and Mrs. Lacy McClain
Dr. and Mrs. John J. McGrath
Mr. John S. McInnes
Mr. Robert P. McKibbon, Jr.
Mr. J. Frank Melcher
Mr. Harold E. Mertz
Mr. and Mrs. Alfred A. Michaud
Mr. and Mrs. John Miklas, Jr.
Mr. and Mrs. Gordon K. Milestone

Donor Members—continued

Mr. and Mrs. Donald E. Miller
Mr. and Mrs. E. Kirkbride Miller
Mr. and Mrs. Walter C. Miller
Dr. Raymond Mize, Jr.
Mr. Cardic N. Mooers
Mr. and Mrs. Arthur Cotton Moore
Mr. and Mrs. J. Edward Moore
Mr. Charles W. Morris
Mr. and Mrs. Carl J. Mulert, Jr.
Mr. and Mrs. James H. Muncy
Mr. G. R. Munger
Mr. John F. Murphy
Mr. and Mrs. Edmund L. Murray
Dr. Henry A. Murray
Mrs. Albert T. Murri
Mr. and Mrs. Bruce H. Nelson
Dr. and Mrs. Dwight W. Newman
Mr. and Mrs. Edmund L. Nichols
Mr. Thomas S. Nichols
Mrs. John Nuveen
Mr. Robert O'Brien
Mr. and Mrs. Howard F. O'Neil
Mr. and Mrs. Guyon P. Pancer
Miss Ruth Upperco Paul
Mr. Harry A. Paynter
Mr. and Mrs. C. Wesley Peebles, Jr.
Mr. Louis Peller
Mr. William C. Penick
Mr. James P. Perry
Mr. Melvin G. Perry
Mr. and Mrs. Donald A. Petrie
Mrs. Charles Emory Phillips
Ms. Rae H. Pickrel
Mr. J. Pierce
Mr. and Mrs. Dwight J. Porter
Mrs. S. Prentice Porter
Ms. Dorothy B. Preslar
Mr. Charles P. Price
Mr. Douglas S. Price
Dr. and Mrs. Jerold Principato
Mrs. Dow Puckett
Mr. Cyrus J. Quinn
Dr. and Mrs. Ernest G. Rafey
Mr. William Rausch
Mr. and Mrs. Michael M. Rea
Mr. and Mrs. Eugene L. Reagan
Mr. Vaughan J. Rees
Dr. Michael J. Reilly
Mr. Don Rhodes
Mr. and Mrs. Charles W. Richards
Mr. and Mrs. Warren Richards
Mr. James H. Ripley
Ms. Jane F. Roberts
Mrs. David Roberts III
Mr. Walter P. Robinson, Jr.
Mr. and Mrs. Samuel J. Rosenfeld
Dr. and Mrs. John W. Rouse, Jr.
Mr. and Mrs. Alan K. Rubin
Dr. Maryon W. Ruchelman
Mr. and Mrs. Roy R. Russo
Mr. Henry Sabatell
Dr. and Mrs. Abner Sachs
Mr. and Mrs. David Sapadin
Mr. and Mrs. Morton Schomer
Mr. and Mrs. Stephen Schroffel
Mr. and Mrs. Frederick P. Schubert
Mr. Lloyd E. Schuster
Mr. James G. Schwade
Mr. James L. Scott
Ms. Marjorie H. Scribner
Miss Carolynne Seeman
Mr. James G. Shakman
Mr. Peter L. Sheldon
Mr. and Mrs. George Sherman
Mrs. James Sinkler
Mr. and Mrs. Robert Sivard
Mr. Nelson Slater
Mr. Sanford Slavin
Mr. and Mrs. Raymond L. Smart
Mr. and Mrs. Dean Smith
Mr. and Mrs. Lawrence P. Snipper
Dr. Marian A. Solomon
Mr. Gary Staples
Dr. and Mrs. T. Dale Stewart
Mr. Louis Stifter
Mrs. Marjorie Taylor Striker
Commander Edward J. Sullivan
Dr. Philip B. Sullivan
Mr. David A. Sutherland
Mr. and Mrs. John A. Sweeney
Ms. Martha Frick Symington
Ms. May Day Taylor
Ms. Linda Teixeira
The Treuhaft Foundation
Mr. John E. Toole
Mr. and Mrs. George Toner
Mr. and Mrs. David G. Townsend
Mr. and Mrs. Stephen A. Trentman
The Truland Foundation
Mr. and Mrs. Robert L. Tull
Mr. James M. Tully
Mr. D. L. Turley
Mr. David S. Turner
United Steelworkers of America
Dr. and Mrs. Philip Varner
Dr. and Mrs. Jeremy P. Waletzky
Ms. Barbara R. Walsh
Lieutenant Colonel Ronald A. Walton

Donor Members—continued

Mr. and Mrs. Ray Watkins	Mr. Crocker Wight
Mr. Arnold Watson	Mrs. Vivian Wildman
Ms. Theresa C. O'Hara Watson	Mr. W. T. Williams
The Honorable James E. Webb	Mr. and Mrs. James A. Williamson, Jr.
Mr. and Mrs. William Weber	Mrs. Mark Winkler
Mr. and Mrs. Nathan Wechsler	Dr. and Mrs. Allan Y. Wolins
Mrs. Mary Nan West	Mr. David W. Wood
Mr. and Mrs. Stanley Westreich	Mr. Clifford R. Wordell
Mrs. Edwin M. Wheeler	Mr. and Mrs. Herman Wouk
Mr. and Mrs. Peter C. White	Mr. C. L. Wright
Mr. and Mrs. Grover C. White, Jr.	Mr. and Mrs. Nelson Wurz
Mr. James L. Whitehead	Mr. and Mrs. Samuel E. Zimmerman
Mr. and Mrs. Donald E. Widmann	

SUPPORTING MEMBERS (\$50 and above)

Mr. and Mrs. Leonard L. Abel	Mr. and Mrs. Martin E. Bayol
Mrs. Ann Duncan Adams	Mr. Charles F. Becker
Mr. and Mrs. Samuel Adams	Mrs. D. R. Beggs
Mr. Robert R. Aitken	Mr. Norman D. Belecki
Mr. W. W. Alexander	Mr. and Mrs. Frederic J. Bell
Dr. and Mrs. R. Eric Alving	Mr. and Mrs. John Bell
Mr. and Mrs. Charles D. Amidon, Jr.	Mr. Thomas Bellinger
Mr. John Amig	Mrs. Brenda C. Bennett
Mr. Carl G. Anderson	Dr. Jeffrey Berenberg
Mr. James G. Andrews	Ms. Carol J. Berg
Miss Rose C. Anthony	Mr. Richard G. Berger
Mr. and Mrs. M. B. Antrim	Ms. L. Bergland
Mr. and Mrs. John J. Arcuri	Mr. Samuel W. Bernheimer
Mr. Norman T. Ares	Dr. and Mrs. James E. Bernstein
Mr. and Mrs. Rudolph Arkin	Mr. John O. Bertelli
Mr. Earl A. Armbrust	Dr. Richard S. Beverly
Mr. Jon H. Arneson	Mr. William G. Beyer
Mr. Joseph S. Asin	Mr. J. B. Bickenbach
Mr. Ronald L. Auble	Mr. Joel Binenfeld
Mr. John W. Auchincloss	Dr. and Mrs. James F. Bing
Mrs. Evelyn A. Azarchi	Mr. and Mrs. F. Douglas Birdzell
Mr. William P. Babione	Mr. John A. Bishop
Mr. Norman G. Bach	Ms. Sharon Bishop
Dr. B. Bacharach	Mrs. Sallie W. Bishton
Mr. Geoffrey B. Baker	Ms. Jill S. Bixler
Mr. Michael D. Baker	Mr. and Mrs. Charles P. Blackledge
Mr. Robert Quincy Baker III	Mrs. Anthony F. Blanks
Mr. Kirk M. Balcom	Mr. A. E. Blevins
Mr. and Mrs. Richard F. Ball	Mr. Frank Bliss, Jr.
Mr. and Mrs. Jeffrey Barnes	Mr. Donn W. Block
Dr. H. David Barton	Admiral and Mrs. Robert H. Blout
Mr. and Mrs. James H. Barton, Jr.	Mrs. Irma Kline Blumenreich
Mr. James Bateman	Mr. David A. Bodner
The Honorable and Mrs. Lucius D. Battle	Mr. Robert F. Bodroghy
Ms. Winifred H. Bauer	Mr. and Mrs. August Boesche
Miss Virginia Bay	Mr. and Mrs. Victor L. Bonat
	The Honorable and Mrs. Philip Bonsal

Supporting Members—continued

Mr. Horace Booth
Mr. Frederick W. Boots
Mr. Arthur S. Borara
Ms. Barbara L. Borchartd
Mr. Vincent B. Boris
Ms. Frances B. Bowen
Mr. and Mrs. Paul A. Bowles
Mr. John F. Boyd
Colonel and Mrs. John R. Boyd
Mr. John J. Boyd, Jr.
Dr. P. H. Boyer
Ms. Evelyn W. Bradshaw
Mr. Raymond A. Brady
Mr. Edward L. Brady II
Mr. and Mrs. De Witt Bragan
Dr. William L. Brannon, Jr.
Dr. James C. Bray
Mr. Gerald Brenner
Mr. and Mrs. Terence R. Brewer
Mr. Harvey K. Brock
Mrs. George H. Brodie
Dr. Michael Brody
Mr. Edward T. Brooks
Mr. Charles S. Brown
Mr. and Mrs. Harold D. Brown
Mr. J. James Brown
Mr. James A. Brown
Mrs. Marjorie K. Brown
Dr. and Mrs. S. Weldon Brown
Mr. William F. Brown
Mr. Herbert S. Brownstein
Mr. Donald J. Bruckmann
Mr. and Mrs. Percival F. Brundage
Mr. W. B. Bryant
Mr. and Mrs. Eugene J. Buehler
Mr. and Mrs. George G. Bull
Mr. Edward P. Bullock
Mr. and Mrs. James M. Burger
Mr. and Mrs. Carl B. Burkard
Mr. R. K. Burkhart
Mr. and Mrs. Donald Burklew
Mrs. Clara May Burns
Mr. Richard Scott Burow
Mr. and Mrs. William R. Bush
Mr. John J. Byrne
Mr. Paul T. Calderwood
Mr. and Mrs. Robert L. Calhoun
Mr. and Mrs. Edwin Callahan
Mr. and Mrs. Gregory M. Cambi
Mr. and Mrs. B. Cameron, Jr.
Mr. Richard Caminiti
Mr. Richard C. Company, Jr.
Mr. William D. Campbell
Mr. Lawrence E. Cantrell, Jr.
Dr. Cesar B. Carabuena
Mr. and Mrs. Charles Carey
Mr. Henry A. Carey, Jr.
Mrs. B. L. Carlin
Mr. and Mrs. Robert H. Carlisle, Jr.
Mr. Charles G. Carlyle
Mr. and Mrs. Woolsey Carmalt
Mr. Harvey Carmel
Ms. Ruth W. Carney
Mr. and Mrs. Kenneth S. Carpenter
Mr. Philip L. Carret
Mr. Kenneth J. Carroll
Mr. and Mrs. Douglas H. Carter
Mr. and Mrs. John A. Casey
Mr. William B. Cassin
Mr. and Mrs. Louis J. Castaldi
Mr. and Mrs. Edmund L. Castillo
Mr. Sabastino J. Castro
Mr. and Mrs. Kevin J. Catt
Mr. and Mrs. Joseph Chackin
Mr. and Mrs. James G. Chandler
Mr. Paige L. Chandler
Mr. Joel Chaseman
Mrs. Harold W. Cheel
Mr. and Mrs. Magnus E. Chelstad
Mr. K. Dexter Cheney
Mr. and Mrs. Timothy W. Childs
Ms. Gabrielle Choy
Mr. and Mrs. Henry C. Christie
Mr. and Mrs. Page B. Clagett
Mr. Ludwig R. Claps
Mr. H. Lawrence Clark
Dr. and Mrs. Thomas A. Clark
Mrs. Eleanor J. Clausner
Mr. and Mrs. A. B. Clifford, Jr.
Mr. Lawrence W. Cobb
Mr. Richard E. Cobb
Colonel and Mrs. Eugene R. Cocke
Mrs. B. A. Cody
Mr. Hayward C. Coe
Dr. and Mrs. David G. Cogan
Mr. and Mrs. L. H. Cohan
Mr. and Mrs. Aaron J. Cohen
Mr. and Mrs. Bernard Cohen
Mr. Bertram M. Cohen
Mr. and Mrs. Ed Cohen
Mr. Robert N. Cohen
Mr. Ronald M. Cohen
Commander and Mrs. Gerald L. Cole
Mr. and Mrs. George C. Collett
Ms. Anne T. Collins
Mrs. J. F. Colwill
Mr. Robert M. Comly
Colonel J. M. Compton

Supporting Members—continued

Mrs. Ethel Conlisk
Mr. and Mrs. James R. Connell
Mr. George A. Cook
Ms. Margaret Cook
Mr. C. M. Cooke, Jr.
Mr. Thomas G. Corcoran, Jr.
Mrs. Mildred S. Corrigan
Mr. and Mrs. Ralph J. Coselli
Mr. and Mrs. Donald N. Coupard
Mr. and Mrs. Howard V. Covell
Mr. and Mrs. Ronald A. Cowan
Mrs. Logan O. Cowgill
Mr. C. W. Cox
Mr. John Howell Cox
Miss Mary L. Cox
Mr. and Mrs. Raymond Cox
Mrs. W. C. Cox
Ms. Patricia E. Coyle
Mr. Jesse L. Crabbs
Mr. and Mrs. William R. Creal
Mr. and Mrs. S. F. Creane
Mr. Glenn R. Crocker
Mr. F. L. Cromwell
Ms. Linda F. Crouse
Ms. Linda Cooper Crow
Ms. Judith C. Croxton
Mr. George A. Crump
Mr. and Mrs. William B. Culver
Dr. and Mrs. W. T. Cunningham
Mr. and Mrs. R. D. Cuthbertson
Mrs. Chester Dale
Mr. and Mrs. John H. Dalton
Ms. Winifred B. Dana
Mr. Ernest B. Dane
Captain and Mrs. R. L. Daniels
Mr. Herbert I. Dann, Jr.
Dr. F. Danziger
Colonel Joseph J. Darlak, M.D.
Mr. and Mrs. F. Elwood Davis
Drs. Nancy W. and William E. Davis
Ms. Olivia Davis
Mr. and Mrs. Raymond T. Davis
Mr. Robert J. Davis
Dr. Walter T. Davison
Mrs. Alva A. Dawson
Ms. Donna A. de Corleto
Mr. Hampton M. de Jarnette
Mr. George B. de Lano
Mr. Silvester de Thomas
Mr. Alan L. Dean
Mr. Albert L. Dean, Jr.
Ms. Marie B. Debacker
Ms. Cassandra H. Deck
Major General Oren E. Dehaven
Mr. and Mrs. Wayne Richard Delaney
Captain and Mrs. Victor Delano
Mr. Howard Dellon
Mr. and Mrs. Andrew S. Deming
Mr. Vinel E. Dent
Mr. Eugene A. Derr
Mr. E. P. di Giannantonio
Miss Patricia Anne Dick
Captain and Mrs. Paul F. Dickens
Mr. and Mrs. Lowell Dightman
Ms. Mary C. Dillingham
Dr. Henry Dillon
Mr. R. Samuel Dillon, Jr.
Mr. and Mrs. John Dimick
Mr. and Mrs. Allen T. Dittmann
Mr. and Mrs. J. Douglas Diven
Mrs. Alfa D. Dodge
Mr. Austin F. Dohrman, Jr.
Ms. Elizabeth Donahue
Mrs. Maren L. Donohue
Mr. David G. Donovan
Ms. Sharon Kay Dooley
Mr. Arthur F. Dorr
Mr. James A. Dorsch
Mr. David M. Dorsen
Mr. Monroe D. Dowling
Mr. John P. Doyle
Mrs. James A. Drennan
Major General Hans H. Driessnack
Mr. and Mrs. Bruce Drill
Ms. Collette M. Drobek
Mr. and Mrs. Richard Dubin
Major and Mrs. Jules Dubois, Jr.
Mr. A. P. Dumas, Jr.
Mr. and Mrs. Walter W. Duncan
Miss Marjorie H. Dunham
Mr. and Mrs. H. Stewart Dunn
Lieutenant Colonel and Mrs. John J.
Durant
Dr. Edgar Durbin, Jr.
Mr. and Mrs. Vernon James Dwyer
Dr. Elizabeth M. Earley
Mr. and Mrs. Lynn R. Eastridge
Brigadier General and Mrs. Richard J.
Eaton
Mr. Robert Eberman
Mr. and Mrs. Theodore M. Edison
Mr. Clarence W. Edminster
Mr. William W. Edmunds
Mr. Bert T. Edwards
Mr. Chester R. Edwards
Dr. Richard W. Efron
Mr. and Mrs. Charles M. Egan
Mr. George G. Eggleston

Supporting Members—continued

Mr. and Mrs. Thomas Ehrlich
Mr. and Mrs. Robert B. Eichholz
Mr. Edward L. Eisenstein
Mr. Roger W. Eisinger, Sr.
Mrs. Leila Eley
Mr. Stuart Elfman
Miss Lynette F. Eltinge
Mr. J. C. Mason Emde
Mrs. J. T. Emery
Mr. and Mrs. Pleasanton H. Ennis
Mrs. Lionel C. Epstein
Mr. R. O. Erickson
Mr. and Mrs. Robert J. Ertman
Mr. and Mrs. Karl Eurenus
Mr. Timothy Evans
Mr. Henri Eyl
Mr. and Mrs. Paul Fabricant
Mr. Jim P. Farrell
Mr. James E. Fearn
Mr. Bruce F. Fein
Mr. and Mrs. Irving Feist
Mr. John F. Felter
Mrs. Guido C. Fenzi
Mr. Joseph C. V. Ferrusi
Mr. Roy Feuchter
Mr. and Mrs. Thomas D. Finney, Jr.
Mr. and Mrs. S. Greenhoot Fischer
Mr. and Mrs. Joel H. Fisher
Mr. Kenneth P. Fisher
Ms. Maureen Fisher
Mr. and Mrs. Robert C. Fitzgerald
Dr. and Mrs. A. L. Fjordbotten
Mr. Lewis I. Flacks
Mr. and Mrs. M. F. Flaherty
Ms. Sally A. Flanik
Mr. Edwin F. Fleischman
Mrs. Julius Fleischmann
Mr. Nicholas T. Fleischmann
Mr. and Mrs. Martin Fleit
Mr. and Mrs. Jerry L. Fletcher
Mr. David Porter Fogle
Mr. Albert A. Folop
Mrs. Gunilla L. Foster
Mr. John H. Foster
Ms. Caroline R. Foulke
Mr. Joel Burr Fowler, II
Dr. and Mrs. Herman Frank
Mr. and Mrs. de Jongh Franklin
Mr. George J. Frazier, Jr.
Mr. Donald E. Frein
Colonel and Mrs. Clarence D. Fried
Mr. and Mrs. William F. Frye
Mr. and Mrs. Everett G. Fuller
Mr. and Mrs. H. N. Fullerton
Mr. Daniel L. Gaba
Mr. Anthony J. Gaetano, Jr.
Mr. H. B. Gambrell
Mr. Edward Gartman
Mrs. Virginia B. Garvey
Mr. William Gasperow
Ms. Rachel Gay
Mr. Robert E. Gayer
Miss Olga M. Gazda
Mr. Zachary Paul Geaneas
Mr. and Mrs. Daniel Geller
Dr. K. L. Geoly
Ms. Amanda E. George
Ms. Nancy L. George
Mr. Rodney W. George
Mr. and Mrs. David Gevanthor
Mr. John Ghiardi
Ms. Frances A. Giacobbe
Mr. and Mrs. Kenneth R. Giddens
Mr. Lincoln J. Gilbert
Mr. Robert S. Gillian, Jr.
Dr. and Mrs. Roy S. Gillinson
Mrs. Bernard Gimbel
Mr. Melvin Gladstone
Mr. and Mrs. Lester E. Glass, Jr.
Mr. W. J. Godard
Mr. Royal T. Godden
Mr. John M. Goehner
Mr. Norris S. Goff
Mr. Robert N. Gold
Dr. and Mrs. Donald Goldberg
Mr. and Mrs. Richard W. Goldman
Mrs. Ted R. Goldsmith
Mrs. Evelyn M. Goldstein
Ms. Gwendolyn Goldstein
Mr. Peter S. Goltra
Miss Elinor Goodspeed
Mr. Carroll A. Gordon
Ms. Fredericka Y. Gordon
Mr. and Mrs. William Goshorn
Mr. and Mrs. R. M. Gotwald
Ms. Kathryn R. Gover
Mr. G. Gowans
Mr. and Mrs. Moses J. Gozonsky
Ms. Eva Graham
Mr. and Mrs. Robert L. Graham
The David Graham Foundation
Mr. Theodore W. Grahlf
Mr. William F. Graney
Mr. and Mrs. John Grattan
Dr. and Mrs. Frank D. Gray, Jr.
Mr. Thomas E. Greathouse
Colonel and Mrs. Thomas C. Green
Dr. and Mrs. Louis Greenberg

Supporting Members—continued

Dr. and Mrs. James B. Gregory	Ms. Deborah D. Herb
Miss Jeanne Griest	Mr. and Mrs. G. F. Herkes
Mr. J. Donald Griffin	Mr. William H. Hernandez, Jr.
Ms. Elisabeth Griffith	Mrs. Christian A. Herter
Mrs. Gloria W. Griffith	Dr. and Mrs. Donald Hesby
Mrs. Hubert L. Grigaut	Mr. and Mrs. William B. Hewitt
Mr. Robert Groberg	Mr. Donald Hill
Mr. and Mrs. David Grodsky	Mr. Charles H. Himman
Dr. and Mrs. C. D. Groover	Mr. and Mrs. Richard H. Hinchcliff
Mr. and Mrs. Daniel Gruber	Mr. William M. Hines
Dr. Grace H. Guin	Mrs. J. H. Ward Hinkson
Mr. and Mrs. Hans Gunzenhauser	Mr. Joseph U. Hinshaw
Mr. and Mrs. Robert J. Haehnle	Mr. and Mrs. Charles J. Hitch
Mr. and Mrs. Richard H. Hagemeyer	Mr. M. L. Hite
Mr. and Mrs. Samuel Halpern	Lieutenant Colonel and Mrs. John G. Hoas
Mr. and Mrs. Theodore M. Hamady	Mr. and Mrs. David S. Hoag
Mr. Ira J. Hamburg	Mr. John G. Hoecker
Mr. Courtney C. Hamilton, Jr.	Mr. Michael R. Hoffman
Dr. and Mrs. William F. Hamilton, Jr.	Mr. Charles Beecher Hogan
Mrs. E. P. Hand	Ms. F. Lynn Holec
Mr. and Mrs. John J. Handiboe	Mr. Henry E. Holley
Mr. and Mrs. Lee T. Hannah	Mr. and Mrs. L. J. Holroyd
Mr. and Mrs. William B. Hannum, Jr.	Mrs. Charles D. Holt
Mrs. V. G. Hansen	Mr. Roger E. Holtman
Mr. and Mrs. John M. Harar	Ms. Laura V. Holtz
Mr. George D. Hardy	Mr. Hume Horan
Mr. J. H. Harms	Mr. and Mrs. Joseph F. Horning
Mr. Ronald Harring	Mr. James R. Howe
Dr. James C. Harris	Mrs. Albert A. Hughes
Mr. Robert C. Harris	Mr. and Mrs. David L. Hughes
Mr. and Mrs. Ellen H. Harrison	Mr. and Mrs. Phillip S. Hughes
Mr. and Mrs. Harry P. Hart	Mr. John L. Hughes-Caley
Mr. L. M. Hart	Mr. and Mrs. David R. Hull
Mr. Peter M. Hart	Mrs. E. H. Hulsey
Mr. and Mrs. John Harwell, Jr.	Mr. Vance Y. Hum
Colonel Lee C. Harwig, Jr.	Mr. and Mrs. James D. Hurd
Mr. Warren W. Hastings	Mr. John Hutchinson
Mr. George A. Hatzes, Jr.	Mr. and Mrs. James M. Idema
Mr. Philip H. Hazelton	Mr. William W. Idler
Mr. and Mrs. Vincent P. Healey	Ms. Janet R. Inscore
Ms. Mercedes Hearn	Mr. Harry Jackson
Mr. Joseph A. Heckman	Ms. Sandra Jacobi
Major Charles E. Heimach	Mr. and Mrs. Ephraim Jacobs
Colonel and Mrs. Robert D. Heinl, Jr.	Mr. Nicholas Jacobs
Mr. Edward Heler	Mr. Harald W. Jacobson
Dr. and Mrs. L. M. Hellman	Mr. and Mrs. Lawrence I. Jacobson
Mr. Eric D. Henderson	Mr. and Mrs. Martin A. Jacoby
Mr. and Mrs. Joseph H. Hennage	Mr. Joseph M. Jaron
Dr. Jane Ellen Henney	Mr. William L. Jarrell
Mr. and Mrs. Timothy Henry	Mr. and Mrs. Thomas E. Jenks
Dr. Walter L. Henry	Mr. W. N. Jerson
	Mr. and Mrs. David D. Johnson
	Dr. Donald A. Johnson

Supporting Members—continued

- Mr. and Mrs. Edward N. Johnson
Mr. and Mrs. Irwin B. Johnson
Ms. Nancy H. Johnson
Mr. Robert E. Johnson
Miss Charlotte Jones
Mr. and Mrs. Wayne V. Jones
Mr. G. Quinton Jones, Jr.
Mr. and Mrs. John B. Jones, Jr.
Mr. Mitchell F. Jones, Jr.
Mr. and Mrs. Michael Joseph
Mrs. Ann F. Joyce
Mr. and Mrs. Albert H. Jung
Mr. John M. Kalbermatten
Mr. and Mrs. Milton Kaplan
Dr. and Mrs. Arnold Kaplin
Mr. James B. Karickhoff
Mr. D. C. Kaufman
Ms. Ruthanne Kaufman
Mr. and Mrs. C. M. Kaye
Mr. and Mrs. Ira Kaye
Mr. E. J. Kazanowski
Ms. Catherine Kazmierczak
Mrs. James F. Keefer
Mr. and Mrs. Earl W. Keegan
Mr. S. Keeler
Mr. Thomas M. Keeling
Ms. Eleanor Kehoe
Mr. David L. Keir
Mr. and Mrs. Eugene A. Keller
Mr. Robert C. Keller, Jr.
Mr. and Mrs. Robert B. Kellert
Mr. and Mrs. William Kenety
Ms. Anna Marie Kent
Judge and Mrs. Allen R. Kenyon
Mr. Andrew A. Kerhulas, Jr.
Mr. William R. Kerivan
Mr. John Kicak
Mr. T. J. Kimmel
Mr. Robert Y. Kimura
Mr. Gordon E. King
Mr. and Mrs. Joseph M.
Kerchheimer
Captain and Mrs. Alexander L.
Kivlen
Mr. and Mrs. Arthur Klein
Mr. Kenneth W. Klein
Ms. Roswitha J. Klement
Mr. Lawrence G. Knecht
Mr. Wily W. Knighten
Mr. and Mrs. Robert F. Knorr
Mr. John W. Knowles
Ms. Jean R. Knutsen
Mr. and Mrs. Allison J. Koberg
Mr. and Mrs. Rolph A. Kohler
Mr. and Mrs. Robert P. Kogod
Mr. David E. Koranek
Dr. and Mrs. M. C. Korengold
Mr. Larry Koziarz
Mr. and Mrs. Robert A. Kraas
Mr. Michael Kraft
Mr. Albert Kramer
Mrs. Howard D. Kramer
Mr. and Mrs. R. L. Kranker
Ms. Nanette Krieger
Major and Mrs. A. N. Kropt
Miss S. Victoria Krusiewski
Mrs. George F. Kugler, Jr.
Mr. Raoul Kulberg
Mr. Stanley J. Kuliczkowski
Ms. Mary A. Kumpe
Colonel and Mrs. J. Scott Kurtz
Dr. and Mrs. Otto A. Kurz
Mr. and Mrs. Edward Kwalwasser
Mr. William P. la Plant, Jr.
Mr. and Mrs. Achille la Pointe
Ms. Ruth M. la Pointe
Ms. Benay la Rock
Mr. and Mrs. Erwin Lachman
Mr. Albert J. Laflam
Mrs. Karna Laird
Mr. Glenn G. Lamson, Jr.
Mr. John Lanchak
Mrs. Marilyn Lane
Mr. and Mrs. Felix J. Lapinski
Mr. Hugh Leroy Latham
Dr. and Mrs. Charles E. Law, Sr.
Mr. John T. Lawrence
Ms. Ella Jean Layman
Mr. and Mrs. Frank J. Leahy, Jr.
Mr. Wilfred M. Leatherwood, Jr.
Mr. and Mrs. Richard M. Lederer, Jr.
Mr. James A. Lee
Mr. and Mrs. W. David Lee
Mr. Marion S. Leech
Colonel and Mrs. Jack L. Leggett
Mr. and Mrs. Stanley W. Legro
Mr. and Mrs. Stan Leibner
Ms. Jacqueline F. Leng
Mr. and Mrs. Curt Leonard
Ms. Ethelynn H. Leonard
Lieutenant Colonel Richard J. Leonard
Mr. and Mrs. Robert Lerner
Mr. and Mrs. Harald R. Leuba
Mr. Daniel W. Leubecker
Dr. and Mrs. Carl M. Leventhal
Mr. Robert Levine
Mr. Herman D. Levy
Mr. and Mrs. David A. Lewis

Supporting Members—continued

Mr. and Mrs. Ernest E. Lewis
Mr. H. D. Lewis
Mr. Morgan Lewis
Mr. and Mrs. Martin Lichtenstein
Mr. Raymond Lieberman
Mr. and Mrs. Robert G. Liebhardt
Mr. Frank W. Lindenberger
Mr. Frank S. Linder
Mr. and Mrs. Richard H. Lindgren
Dr. and Mrs. D. A. Lindquist
Mrs. Jean C. Lindsey
Miss Jane T. Lingo
Mr. R. Robert Linowes
Mr. and Mrs. Sol M. Linowitz
Mr. William Liss
Mr. and Mrs. Robert J. List
Dr. Kathleen E. Lloyd
Dr. P. Loe
Mr. and Mrs. Jerome T. Loeb
Ms. Ursula G. Lohmann
Dr. Sonja Loncarec
Mr. Tom H. W. Loomis
Mr. Duarte A. Lopes
Mr. Arnold Lorbeer
Mr. John G. Lorenz
Mr. and Mrs. Gerald Loube
Dr. Ira S. Lourie
Mr. Richard G. Loutsch
Mr. and Mrs. Stephen Low
Mr. William Lowenthal
Mr. Harry Lunn
Dr. and Mrs. Joseph W. Luquire
Mr. Norman W. Lutkefedder
Ms. Margaret R. Lynch
Mrs. Elizabeth MacMillan
Mr. Herbert C. Macey
Mr. and Mrs. James L. Mack
Mr. T. Macklin, Jr.
Ms. Mary R. MacMartin
Mr. J. Robert MacNaughton
Mr. Rex A. Maddox
Mrs. James T. Magee
Captain Ronald L. Magee
Mrs. Isabel C. Mahaffie
Dr. and Mrs. Robert A. Mainzer
Mr. and Mrs. Richard Mallchok
Dr. and Mrs. Richard F. Manegold
Mr. Robert W. Mann
Mr. E. Manuel Manning
Mr. and Mrs. D. Manns
Major and Mrs. George S.
Mansfield
Mr. and Mrs. H. Tyler Marcy
Mr. John W. Margosian
Mrs. R. A. Marmet
Mr. and Mrs. Andrew W. Marshall
Mr. Barton A. Marshall
Mr. Richard Heeman Marshall
Mrs. Elizabeth Martin
Mrs. William Marvel
Miss Priscilla Mason
Mrs. Barbara F. Masur
Mr. P. H. Mathews
Dr. and Mrs. A. B. Mauger
Ms. Freda J. Mauldin
Dr. and Mrs. Charles E. May
Dr. and Mrs. Francis Mayle, Jr.
Mr. and Mrs. Joseph S. Mazza
Mr. and Mrs. Norman H. McCabe
Mr. Thomas L. McCamley
Mr. and Mrs. Martin E. McCavitt
Mrs. Betty McComsey
Colonel Stephen McCormick
Mr. John P. McCullough
Mr. Matthew B. McCullough
Mr. Allan R. McDonald
Mr. Charles Vincent McDonald
Dr. and Mrs. James P. McDonald
Mr. and Mrs. Grover R. McDowell
Mr. and Mrs. J. W. McEachen
Mr. and Mrs. Donn McGiehan
Mr. James P. McGranery, Jr.
Mr. Hugh F. McGrath
Mr. and Mrs. Kenneth C. McGuinness
Mr. and Mrs. Philip L. McHugh
Dr. Richard J. McIlroy
Mr. and Mrs. B. B. McKay
Mr. and Mrs. Richard R. McLaughlin
Dr. and Mrs. R. R. McMeekin
Mr. Thomas M. McMurray
Mr. J. Jerome McNally
Dr. J. Malcolm McNeil
Ms. Betty M. McQueen
Ms. Emily M. McQueen
Mr. W. W. McWhinney
Mr. and Mrs. Gilbert D. Mead
Mr. and Mrs. Richard J. Medalie
Dr. Barbara A. Mella
Mrs. Dorothy B. Melville
Mrs. R. B. Menapace
Mr. and Mrs. Louis W. Mendonsa
Mr. and Mrs. Norman J. Merksame
Mrs. Ida C. Merriam
Mr. and Mrs. Harold W. Merritt
Mr. David Messent
Mr. and Mrs. L. Meyer
Ms. Marilyn Meyerhoff
Mr. Edwin Charles Michael

Supporting Members—continued

- Mr. and Mrs. John D. Michael
Dr. David B. Michaels
Ms. Patricia Milford
Mr. and Mrs. Edward A. Miller
Mr. and Mrs. G. O. Miller
Mr. L. Allen Miller
Mr. Milo E. Miller
Mr. Warren G. Miller
Mr. M. H. Miller
Ms. Justine Milliken
Mr. Donn Minnum
Dr. and Mrs. John Minna
Dr. Emile R. Mohler, Jr.
Mr. Robert M. Molitor
Colonel and Mrs. Kenneth L. Moll
Mr. and Mrs. George D. Monk
Dr. Frederick Paul Montana
Mrs. E. P. Moore
Mr. James Moore
Mr. Leonard Moretz
Ms. Margaret Morgan
Mr. and Mrs. Warren R. Morrow
Mr. and Mrs. John Mudd
Mrs. Anita Mueller
Mr. and Mrs. Ted Mueller
Mr. Burnaby Munson
Mr. Robert C. Murdock
Mr. Patrick J. Murphy
Dr. Frank J. Murphy
Dr. and Mrs. Donald A. Myers
Mr. John Rodman Myers
Miss Lucile Myers
Mr. Peter B. Myers
Dr. and Mrs. Joel B. Nadler
Mr. and Mrs. Thomas Nadolski
Ms. Alixa Naff
Mr. Robert Naugle
Mr. Thomas W. Nawn
Ms. Mary T. Nealon
Mr. and Mrs. Robert E. Newby
Mr. Leland J. Newell
Mr. and Mrs. William Newlin
Mr. Robert Newman
Mr. Gary Ray Newport
Mr. and Mrs. Fred J. Newton
Mr. Robert L. Nichols
Mr. Roger A. Nickles
Mrs. F. C. Noble
Major and Mrs. Gerald T. Nolan
Mr. and Mrs. Glenn Nordin
Mr. Giles R. Norrington
Mr. and Mrs. Jack R. Norwood
Mr. David P. Notley
Mr. and Mrs. Michael P. Novelli
Colonel C. K. Nulsen
The Honorable and Mrs.
Sam A. Nunn
Mr. and Mrs. Carey B. O'Conner
Ms. Patricia H. O'Connor
Mr. and Mrs. Paul T. O'Day
Mr. and Mrs. A. E. O'Donnel
Mr. Thomas O'Hare
Mr. and Mrs. Jerry O'Regan
Mr. Owen Oates
Colonel J. W. Oberg
Mrs. John B. Ogilvie
Mr. and Mrs. Graden E. Okes
Mr. and Mrs. Paul A. Oliver
Mr. and Mrs. Kenneth P. Olson
Mr. Robert C. Olson
Mr. Cyrus Omidyar
Mrs. Carolyn C. Onufrak
Mr. and Mrs. Thomas D. Orr
Mr. and Mrs. E. G. Osbourne
Mr. and Mrs. David Osnos
Mr. Allan W. Ostar
Mr. W. W. Owens
Mr. William T. Owens
Mr. George E. Paleologos
Dr. and Mrs. Michael N.
Papadopoulos
Commander Everett A. Parke
Mrs. Alice Mengel Parker
Mr. Charles M. Parker
Mr. and Mrs. Robert L. Parnell, Jr.
Mr. and Mrs. Gerald H. Patrick
Mr. Jeffrey Ewen Patterson
Ms. Helen Ann Patton
Mr. and Mrs. Stanley J. Pawlowski
Mr. Charles W. Payne
Mr. Raymond Pearlstine
Mr. and Mrs. Harold A. Pedersen
Mr. and Mrs. Jack Walter Peltason
Mr. Clarence Pennington
Mr. William C. Pennington
Mr. George E. Perez
Mr. Thomas W. Perry, Jr.
Mr. Tucker W. Peterson
Mr. and Mrs. Joseph T. Philibert
Mrs. Joseph B. Philips
Captain and Mrs. Charles Phillips
Ms. Ruth Phillips
Mr. and Mrs. Adrien Picard
Mr. James H. Pickford
Mr. and Mrs. Robert D. Pierce
Ms. Jeanette B. Pispek
Mr. Stanley B. Plotkin
Mr. and Mrs. Dexter S. Plumlee

Supporting Members—continued

Mr. Michael G. Pohlod
Mr. and Mrs. Glenn Polston
Mr. and Mrs. Leo Pompliano
Mr. Frank T. Pope, Jr.
Mr. Bernard L. Poppert
Mr. and Mrs. Rodman Porter
Mr. Paul J. Posner
Mr. John N. Postak
Mr. Paul E. Postelnek
Ms. Laura R. Potter
Mr. and Mrs. E. L. Povich
Mr. and Mrs. Richard Preston
Mr. and Mrs. Glenn Pribus
Mr. and Mrs. Reuben P. Prichard
Mr. R. W. Pritchard
Mr. and Mrs. William R. Probst
Mr. and Mrs. Jeffrey A. Prussin
Ms. Inez L. Pulver
Dr. Regina A. Puryear
Mr. Daniel M. Radcliffe
Mr. and Mrs. A. R. Rankin
Dr. Carl L. Rasak
Dr. and Mrs. Walton A.
Rathbun, Jr.
Mr. and Mrs. Harold Ravner
Ms. Isabel M. Rea
Mr. and Mrs. John Grandin Reading
Mr. Jack Reams
Mr. and Mrs. J. Philip Reberger
Mr. and Mrs. Edwin Rector
Mr. and Mrs. Thorburn Reid
Mr. Michael L. Restaine
Mr. F. F. Reynolds
Mr. and Mrs. Frank M. Reynolds
Mr. John Arthur Reynolds
Mrs. John B. Rhineland
Mr. Joseph A. Rice
Mr. and Mrs. Michael A.
Richardson
Mr. and Mrs. William W.
Richardson
Ms. Brenda Lee Richter
Dr. Monira K. Rifaat
Mr. James R. Rivera
Mr. and Mrs. John H. Rixse, Jr.
Mr. and Mrs. Maxwell B. Roberts
Mr. and Mrs. F. L. Robertson
Mr. Paul Robindeaux
Dr. Max Robinowitz
Mr. Hamilton Robinson
Mr. Roy Antony Robson
Dr. and Mrs. S. David Rockoff
Mr. and Mrs. Paul Rollins
Mr. John J. Roome
Mr. William Rose III
Mr. Gerald A. Rosen
Mr. Marvin Rosenberg
Mr. Leon I. Rosenbluth
Mr. R. M. Rosenthal
Mr. and Mrs. Albert S. Roslyn
Mr. and Mrs. Richard Ross
Mr. and Mrs. J. S. Rossen
Mr. Robert J. Rovang
Mr. and Mrs. Thomas E. Rowland
Mr. Jim L. Russell
Mrs. John Barry Ryan
Mr. Herbert C. Ryding, Jr.
Mr. and Mrs. Hachemi Saada
Mr. and Mrs. Marvin P. Sadur
Ms. Mary L. Safrit
Dr. and Mrs. David L. Salmon
Mr. Stephen M. Salny
Mr. and Mrs. Herbert Salzman
Mr. Arthur R. Sando
Mr. and Mrs. Julius Sankin
Mrs. Joseph C. Satterthwaite
Mrs. Robert P. Sattler
Mr. and Mrs. B. Francis Saul II
Mr. and Mrs. Thorndike Saville
Mr. Michael F. Sawyer
Mr. and Mrs. J. E. Sayers
The Very Reverend and Mrs.
Francis B. Sayre
Ms. Catherine M. Scannell
Mr. Charles W. Schaffer
Mr. and Mrs. Radford Schantz
Mr. and Mrs. Paul J. Scheips
Mr. Ronald J. Schellhase
Mr. Robert J. Schemel
Mr. and Mrs. James H. Scheuer
Dr. Basil A. Schiff
Ms. Penelope Schleifer
Mrs. Anita Schlem
Mr. John C. Schleter
Mrs. Julian L. Schley
Ms. Antoinette B. Schmahl
Mr. Harvey B. Schneider
Ms. Judy L. Schneider
Mr. and Mrs. Harvin Schneiderman
Mr. Jacques J. Schoch
Mr. William E. Schremp
Miss Greta Schuessler
Dr. and Mrs. William J. Schultis
Mr. and Mrs. Leslie I. Schwartz
Mrs. Morton L. Schwartz
Major and Mrs. T. E. Schwartz
Mr. Tommy Schwartz
Mr. and Mrs. Benjamin K. Schwarz

Supporting Members—continued

Mr. C. W. Scott
Dr. Wayne Scott
Mr. Allen J. Seeber
Mr. and Mrs. Gene F. Seevers
Mr. and Mrs. Lloyd R. Seiling
Mr. and Mrs. Seymour Max Selig
Mr. Lee C. Seligman
Mr. and Mrs. Ralph Sellers
Ms. Catherine H. Sells
Mr. Sol Seltzer
Mr. and Mrs. Edward E. Sergent
Mr. Sherman J. Sexton
Dr. Gordon T. Shahin
Dr. James J. Shanley
Mr. and Mrs. Willis H. Shapley
Mr. John F. Shaw
Dr. Robert L. Sherman
Mr. and Mrs. William W. Sherwin
Mr. William G. Shields
Mr. John D. Shilling
Mr. Rufus Shivers
Mr. and Mrs. Harry Shoub
Colonel B. S. Shute
Mr. and Mrs. Norman S. Siegel
Mr. Alexander W. Sierck
Ms. Ellen Vera Sigal
Mr. and Mrs. Jack Silberman
Dr. Henry K. Silberman
Dr. Frank Silver
Ms. Evelyn Silverglit
Mrs. John Farr Simmons
Mrs. Ellen Hanna Simmons
Mr. and Mrs. Richard K. Simmons
Mr. Robert M. Simmons
Mrs. Charles Simon
Mr. Matthew H. Simon
Mr. Stanley Simon
Dr. and Mrs. James D. Singletary
Lieutenant Colonel David T. Sites
Ms. Anne Smalet
Colonel and Mrs. C. Haskell Small
Mr. B. A. Smith
Mr. and Mrs. Charles H. Smith
Mr. and Mrs. Harold Smith
Mr. Hugh Stewart Smith
Mr. and Mrs. Joe Pitts Smith
Mrs. L. M. Smith
Mrs. Myron B. Smith
Dr. and Mrs. Scott M. Smith
Ms. Shirley A. Smith
Mr. and Mrs. Timothy D. Smith
Mr. and Mrs. Larry Snodgrass
Mr. and Mrs. Gerald Snyder
Mr. and Mrs. Saul Snyder
Mr. Robert W. Snyder II
Mrs. Robert A. Sonneborn
Mr. and Mrs. Hugh M. South
Mr. W. J. Spargo
Mr. Edward W. Spears
Mr. and Mrs. Henry Spiegelblatt
Mr. Gary W. Spokes
Mr. G. Sprague
Dr. Daniel L. Stabile
Mr. Richard W. Stafford
Mr. and Mrs. Julius Stanges
Mr. Ronald A. Stanley
Mrs. Edythe E. Stauffer
Mr. Stuart L. Strauss
Dr. Colby S. Stearns
Mr. William R. Stehle
Dr. Marjorie L. Stein
Mr. and Mrs. Henry Z. Steinway
Mr. and Mrs. Leo M. Stepanian
Mr. and Mrs. Robert B. Stephens
Ms. Elizabeth M. Stern
Mr. Jeffery A. Stevens
Mr. Richard W. Stickell
Dr. Serena Stier
Mr. John S. Stiles, Jr.
Mr. and Mrs. Paul K. Stockmeyer
Mrs. Tegner Stokes
Mr. J. Jacques Stone
Dr. and Mrs. K. A. Strand
Mrs. Richard H. Stratton
Mrs. R. Strickhart
Dr. and Mrs. Joseph Stuart
Mr. and Mrs. A. Stutzer
Mr. and Mrs. Richard L. Sugarman
Ms. Elizabeth Sullam
Mr. Eugene T. Sullivan
Mr. Dwight Y. Sumida
Mr. Donn E. Summers
Lieutenant General and Mrs. Gordon
Sumner, Jr.
Mr. Charles A. Suter
Mr. David E. Suttle
Mr. Robert L. Swart, Jr.
Mr. W. M. Swatek
Dr. and Mrs. Edgar Sweren
Mr. and Mrs. Ralph Swetlow
Mrs. Mary Davidson Swift
Mr. Richard O. Swim
Mr. Gerald L. Swope
Mr. Harry F. Swope III
Mr. and Mrs. James McK. Symington
Dr. I. R. Tabershaw
Mr. Worthington Heaton Talcott
Mr. and Mrs. Pier Talenti

Supporting Members—continued

Mr. James J. Tanner
Dr. Vincent A. Taraszkiwski
Mr. Curtis W. Tarr
Mrs. Benjamin E. Tate
Miss G. E. Tatting
Dr. Joel M. Taubin
Ms. Hilda Taylor
Mr. Julian M. Teal
Mr. and Mrs. Ralph H. Teller
Mr. Peter A. Ten Eyck
Mr. Joseph M. Tessmer
Mr. Alfred Thieme, Jr.
Ms. Linda R. Thompson
Mr. and Mrs. Brian Thompson
Ms. Mary Edith Thomson
Mr. D. S. Thorne
Mrs. B. W. Thoron
Mr. George Tievsky
Mr. and Mrs. Gordon M. Tiger
Mr. and Mrs. Sylvan M. Tobin
Mrs. Stirling Tomkins
Mrs. Dorothy Townsend
Mr. Henry R. Traubitz
Mr. Thomas T. Traywick, Sr.
Mrs. S. Diane Treat
Mr. and Mrs. William R. Trigg III
Mr. Warren L. Tripp
Mr. and Mrs. Lynn A. Trobaugh
Mr. Jabes Glen Trott
Mr. and Mrs. A. Buel Trowbridge
Mr. S. C. Tupman
Mr. Walter A. Turchick
Mr. and Mrs. Paul Turkeltaub
Mr. John H. Turner
Mrs. A. G. Tuthill
Mr. George E. Tuttle
Mr. and Mrs. Paul E. Tychsen
Dr. Winston M. Ueno
Mrs. Judith Falk Unger
Mr. Anthony S. Vaivada
Lieutenant Egbert N. P. Van Es
Mr. Charles O. Van Horn
Mr. and Mrs. Joseph C. Vanzant, Jr.
Commander and Mrs.
Joseph C. Vanzant
Mr. and Mrs. Theodore Vass
Ms. Emily W. Vaughn
Captain Robert E. Vaughn
Mr. John M. Veatch
Mr. John M. Venditti
Mr. Wallace W. Voigt
Mr. and Mrs. Elmer E. Wachter
Mr. and Mrs. John P. Wagner
Mr. and Mrs. Milo Waldes
Ms. Clara B. Walker
Mr. and Mrs. George E. Walker
Dr. and Mrs. Lawrence W. Walker
Mr. A. E. Wall
Mr. and Mrs. Jay R. Wallace
Mrs. Elizabeth D. Walsh
Mr. and Mrs. Richard F. Walsh
Dr. and Mrs. William T. Walter
Mr. James M. Walton
Mrs. Harry Wagner
Drs. Henry and Celia Ward
Mr. John S. Ward, Jr.
Mr. Lewis T. Waters
Ms. Susan C. Watkins
Mr. and Mrs. Joseph C. Watts
Colonel and Mrs. Louis V. Watwood
Mr. and Mrs. W. C. Weaver
Dr. Hamilton B. Webb
Ms. Beverly Weber
Mr. Fred Weck
Mr. Larry A. Wehr
Mrs. Shelley M. Weicker
Mr. Norman Weiden
Mr. and Mrs. Frank A. Weil
Miss Ruth M. Weiland
Mr. J. K. Weinman
Mr. Edmund Wellington, Jr.
Mr. and Mrs. Oscar M. Wells
Dr. and Mrs. Douglas C. Wendt
Mrs. Beth Werner
Mr. and Mrs. Richard J. Wertheimer
Mr. Otto R. Wessel
Mr. and Mrs. Larry E. Westphal
Mr. and Mrs. William B. Wharton
Mr. and Mrs. Gerald R. Wheaton
Mr. George Y. Wheeler
Mr. Thomas J. Whelan
Ms. Gloria Whipple
Mr. and Mrs. Ben White
Mr. and Mrs. Philip C. White
Mr. Reider J. White
Mrs. Robert K. White
Ms. Verna H. White
Mrs. Joseph M. Whitson
Mr. G. William Whyers
Mr. and Mrs. John E. Wickman
Mr. and Mrs. Robert H. Wilbur
Mr. Julius Wile
Mr. and Mrs. Gordon Wiley
Major General and Mrs. H. L. Wilkers
Mrs. Richard E. Wilkie
Mr. J. Harvey Wilkinson
Mr. and Mrs. Robert Willard
Mr. and Mrs. Norman C. Willcox

Supporting Members—continued

Mr. and Mrs. Arnold Clarke Williams	Mr. and Mrs. David B. Wood
Mr. E. H. Williams	Mr. David L. Wood
Mr. and Mrs. Paul J. Williams	Mr. George E. Woodin
Mr. and Mrs. E. I. Williams, Jr.	Mr. and Mrs. William Woodward
Colonel E. J. Williams	Mr. and Mrs. William Work
Mr. and Mrs. Robert Williamson	Mrs. Frank L. Wright
Mr. and Mrs. John K. Willis	Mr. and Mrs. Kenneth M. Wright
Mr. and Mrs. Morton H. Wilner	Mr. Walter Ray Wright
Mr. and Mrs. Edward Foss Wilson	Mr. Christopher B. Wry, Jr.
Mr. L. E. Wilson	Ms. Jane W. Wuchinch
Mr. and Mrs. Luke W. Wilson	Mrs. Leslie H. Wyman
Mr. and Mrs. Donald E. Wilson	Mr. and Mrs. Philip D. Yaney
Mr. Robert W. Wilson	Mr. and Mrs. Charles D. Young
Mrs. Milton Wilson, Jr.	Mr. and Mrs. Frederick W. Young
Mr. and Mrs. Curtin Winsor, Jr.	Mr. Kenneth R. Youngert
Mr. and Mrs. Milton S. Winters	Mr. N. P. Ytterday
Mrs. Flora Jane Winton	Mr. Daniel H. Zafren
Mr. and Mrs. Philip B. Wisman	Mr. Peter Zagarella
Colonel Ralph M. Wismer	Mr. and Mrs. Lawrence G. Zambotti
Mr. Russell R. Witherow	Mr. and Mrs. Robert A. Zauner
Ms. Miriam R. Witlin	Mr. Thomas G. Zee
Mr. Gilbert A. Wolf	Mrs. John H. Zentay
Mr. Claude R. Wolfe	Mr. A. B. Zimmer
Mrs. Saralyn V. Wolff	Mr. and Mrs. Joseph Zinn
Ms. Audrey J. Wolfinger	Dr. S. S. Zungoli
	Mr. and Mrs. Gunter Zweig

FOREIGN STUDY TOUR PARTICIPANTS

Miss E. S. Abernethy	Mr. and Mrs. J. Pierre Bernard
Mrs. Frances Allensworth	Mr. and Mrs. Walter S. Blair
Mr. and Mrs. Wilfrid J. Amisial	Miss Frances Blank
Mr. and Mrs. Thomas D. Anderson	Mr. and Mrs. Morris B. Blumberg
Mr. William L. Anderson	Mrs. Julian S. Boardman
Mr. and Mrs. Mark Edwin Andrews	Mrs. Dean E. Bowen
Miss Basile Anglin	Miss Helen G. Boyajian
Mr. and Mrs. Alfred Appel	Miss Virginia I. Boy-ed
Mr. Arthur R. Armstrong	Miss Dorothea Bourne
Mrs. Michael Arpad	Miss Helen Brandt
Mr. and Mrs. S. S. Auchincloss	Mrs. J. Elliott Braucher
Miss Cheryle Ann Aurecchione	Mrs. Mary M. Brennan
Mr. and Mrs. Paul L. Austin	Mrs. Nan Broeder
Mrs. Donald A. Baillie	Mr. and Mrs. Leon Brown
Mrs. N. Meyer Baker	Mr. William A. Bryson, Jr.
Mr. and Mrs. Christopher C. Baldwin	Mr. and Mrs. Donald P. Buchanan
Mrs. Paul F. Barham	Mrs. William E. Carey
Mr. and Mrs. A. M. Barnes, Jr.	Mrs. Charles W. Caldwell
Mr. Charles J. Barnes	Mr. and Mrs. H. E. Carrico
Mrs. Genevieve Barth	Ms. Mary Carson
Dr. Helen Batchelor	Miss Linda L. Castiglioni
Mrs. D. Bronson Beeler	Ms. Anne M. Chute
Mrs. Katherine H. Benedict	Miss Irene W. Clark
Mr. and Mrs. Merrill Berkley	Mrs. Travis H. Clark
	Mr. Ludwig Claps

Foreign Study Tour Participants—continued

Mr. and Mrs. Joe R. Cobern	Dr. and Mrs. Julian H. Frieden
Mr. and Mrs. Sydney M. Cone, Jr.	Mrs. Lorraine Gallagher Freimann
Mr. and Mrs. Valentine J. Connolly	Mrs. Frederick F. Fuessenich
Mrs. Lois Lorton Cook	Mrs. Helen Gates
Miss Mary Cooley	Mrs. Dorothy Gardner
Mr. and Mrs. Robert C. Coplan	Miss Mary C. Ginkiewicz
Judge and Mrs. Leo W. Corkin	Mr. and Mrs. W. Shuler Ginn
Mr. Perry Cott	Mr. and Mrs. Sidney Gleason
Mr. Albert H. Cousins, Jr.	Canon and Mrs. C. Leslie Glenn
Mr. and Mrs. B. W. Crain, Jr.	Mr. and Mrs. Ezra Glaser
Mrs. Gus Cranz, Jr.	Miss Maria Elena Gonzalez
Mrs. Elizabeth P. Cressman	Mrs. James Lippincott Goodwin
Mr. and Mrs. Richard W. Cutler	Mr. and Mrs. William C. Gouldsbury
Mr. and Mrs. Krest Cyr	Miss Cornelia Gross
Mr. and Mrs. Charles P. Dabney	Mr. and Mrs. Jerome B. Grossman
Dr. and Mrs. Gilbert Dalldorf	Mrs. Kathryn L. Haas
Mrs. Ethel M. Danenhower	Ms. Juanita R. Hagan
Mr. and Mrs. Harry Daniel	Mrs. Henry G. Hager
Dr. Helen E. Daniells	Mrs. Grace E. Haggett
Mrs. Abraham W. Danish	Mrs. Forbes Hall
Miss Susan Darling	Miss Anita Kay Hardy
Mrs. Robert Daugherty	Mrs. Jacqueline A. Harris
Mrs. L. D. Dennis	Mrs. Elizabeth C. Harrison
Miss Celeste A. DeRosa	Mr. and Mrs. Robert C. Hattersley
Mr. and Mrs. Laurence B. Dodds	Miss Margery C. Hawley
Mrs. H. Whitney Dodge	Miss Gertrude E. Heare
Mrs. Kenneth M. Doty	Mrs. Kathleen C. Heinlein
Miss P. M. Douglas	Mrs. Nelson Helm
Mrs. William G. Dreisbach	Mrs. Robert N. Hennessy
Mrs. J. Patrick Dunne	Captain and Mrs. C. R. Herms
Miss Virginia M. Dusel	Mrs. Richard R. Hobbins
Mrs. Tom J. Eals	Mr. and Mrs. A. George Hoffman
Mr. and Mrs. James S. Earley	Mrs. Martin E. Hogan, Jr.
Mr. and Mrs. Kent D. Eastin	Miss Honor M. Hollinghurst
Mr. and Mrs. Herman J. Eckrich, Jr.	Mr. Donald Phillip Holloway
Mr. and Mrs. E. Donald Elliott	Mrs. James Holman
Mrs. Foster Ellis	Miss Elizabeth B. Hone
Dr. Felice M. Emery	Mr. and Mrs. Alvin K. Hottle
Miss Margaret Emery	Mr. and Mrs. Morton B. Howell
Mr. and Mrs. Jackson P. English	Mrs. N. C. Huber
Miss Pamela A. Eros	Mrs. Hugo G. Huettig, Jr.
Dr. and Mrs. L. Whiting Farinholt, Jr.	Mrs. Aline W. Hugus
Mrs. George Farkas	Miss Hana Hurdalkova
Mr. and Mrs. Earl Farmer	Miss Barbara Hyde
Miss Sarah M. Ferguson	Mr. and Mrs. William Ireland, Jr.
Mr. F. Irwin Finch	Miss M. Roberta Irwin
Ms. Louise Russell Finnoff	Mrs. Marian Isern
Mrs. Florence M. K. Fischer	Mr. and Mrs. Leslie A. Jacobson
Mr. and Mrs. Russel H. Fowler	Mr. and Mrs. Gustave Jamart
Dr. and Mrs. J. Robert Fox	Mrs. Marguerite S. Jansky
Miss Karen Fox	Miss Joan L. Janssen
Mr. and Mrs. Eli Frank, Jr.	Mrs. Randall Jarrell
Mrs. Andrew A. Fraser	Dr. and Mrs. John F. Jewett
Mrs. Mary Kraft Frey	Mrs. Elizabeth B. Johnson

Foreign Study Tour Participants—continued

Mrs. Jane Strausbaugh Johnson
Dr. Mary W. Juday
Mr. and Mrs. C. S. Justman
Mr. and Mrs. William B. Kacian
Miss Ilona Karka
Dr. and Mrs. James R. Karns
Mr. Erich Kauders
Mr. and Mrs. Andrew S. Keck
Mrs. John T. Keliher
Mrs. Carolyn Kent
Mr. and Mrs. Morris Ketchum, Jr.
Mr. Walter H. Kidd
Mr. William B. Kight
Mr. and Mrs. Eugene M. Kramer
Mrs. Millicent T. Lang
Mrs. Ralph M. Larson
Miss Betty McCluer Lee
Mr. and Mrs. Halleck Lefferts
Mr. and Mrs. Frank H. Leib
Miss Marguerite LeLaurin
Mrs. Lucy B. Lemmon
Mr. and Mrs. H. Willard Lende
Mr. H. W. Lende, Jr.
Mr. and Mrs. Robert R. Lende
Mr. and Mrs. George Levin
Dr. and Mrs. Bjorn Lih
Mr. and Mrs. Owen S. Lindsay
Mrs. Anne C. Little
Mrs. Roy H. Lively
Miss Juliet Lohr
Miss Anna L. Loze
Mr. and Mrs. C. J. Lynch
Miss Florence Maple
Dr. and Mrs. Miles R. Markley
Miss Janet R. Marks
Mr. and Mrs. Lealon E. Martin
Mr. and Mrs. Thomas J. Martin
Mr. Gunnar Maske
Mrs. Otto S. Mayer
Mrs. George W. McCall
Mrs. David L. McCarroll
Mrs. T. Clyde McCarroll
Mrs. Franklin A. McCarthy
Mr. and Mrs. Gerald S. McCarthy
Mr. and Mrs. William C. McClintock
Mrs. James R. McCredie
Mr. and Mrs. J. W. McCutcheon
Mr. and Mrs. John W. McGreevey
Mr. and Mrs. Eugene C. McHenry
Mr. and Mrs. Howard F. McMurdie
Miss Mabel E. McNary
Mr. and Mrs. Robert R. McNary
Mr. Donald C. McVay
Professor August Meier
Mrs. Pearl Mering
Mr. and Mrs. Harold W. Metz
Mrs. Karl E. Meyer
Mr. Charles B. Miller
Mr. and Mrs. N. Barr Miller
Mrs. Erma C. Milne
Miss Margaret D. Mitchell
Mrs. Paul H. Mockett
Mr. and Mrs. Ralph A. Morgan
Mr. Joseph W. Morrisey
Miss Mabel M. Morrison
Mr. and Mrs. J. Lane Morthland
Mr. and Mrs. Thomas G. Nanney
Mrs. Eleanor R. Nelson
Mr. and Mrs. Joseph B. Neiser
Mrs. R. H. Nichols
Mrs. George J. Nowak
Dr. and Mrs. Walter Nudelman
Mr. and Mrs. Bernard T. O'Connor
Mrs. Martin B. O'Connor
Mrs. James M. E. O'Grady
Mrs. Edith M. Olmstead
Mr. and Mrs. Daniel J. O'Neil
Mr. and Mrs. Noël S. O'Reilly
Mrs. Henry D. Ormsby
Mr. and Mrs. Stewart Orton
Mr. and Mrs. George Armstrong Ott
Mr. and Mrs. George Page
Mr. and Mrs. William S. Page
Mrs. Robert Pansky
Professor and Mrs. John H. Parry
Dr. and Mrs. Harold H. Parsons
Mrs. Charles F. Passel
Mr. and Mrs. Thomas J. Pearsall
Mr. and Mrs. C. Wesley Peebles, Jr.
Mr. and Mrs. George W. Petersen
Mr. and Mrs. Donald A. Petrie
Mr. and Mrs. Gordon Pettit
Mrs. Grace T. Pfister
Mrs. Albert R. Pierce, Jr.
Mr. and Mrs. Henry H. Pierce, Jr.
Miss Phyllis Platz
Mr. Douglas K. Porteous
Mrs. Florence T. Powell
Mr. and Mrs. Dennis Quittner
Miss Margaret Rathbone
Miss Lois Reddin
Mrs. Thomas Reese
Mrs. Vera G. Ricci
Mrs. Elizabeth P. Richards
Mrs. J. A. Rogers
Mrs. John Rood
Miss James Bruce Ross
Mrs. C. R. Rudolph

Foreign Study Tour Participants—continued

Mrs. Roberta Ruliffson	Miss Suzanne S. Taylor
Mr. and Mrs. Rucker Ryland	Mrs. Constance W. Thompson
Mr. Loren C. Sage	Mrs. Donna Thompson
Miss Wilma Sain	Mrs. Ellen G. Thompson
Mrs. Jane M. Sasse	Miss Sara A. Thompson
Miss Catherine Satterlee	Mrs. Anna L. Thornbury
Miss Harriet Schofield	Mr. and Mrs. Bela C. Tift
Mrs. Benjamin Schiffer	Miss Cora J. Tripp
Mrs. Henry A. Schroeder	Mr. and Mrs. Christopher Tunnard
Mr. and Mrs. Edward Sheehan	Mr. and Mrs. William R. Tupper
Schroering	Miss Catherine P. Waddle
Mr. and Mrs. Gustav Schwab	Mrs. W. Clyde Ward
Mrs. Jerome W. Schwabe	Mrs. Dorothy Warner
Miss Frances Scudder	Mr. and Mrs. Harold C. Warnock
Mr. and Mrs. Harold J. Selinsky	Mrs. Robert B. Waters
Miss Bonnie L. Selinsky	Mrs. Horton Watkins
Mr. and Mrs. Guy Seward	Mr. and Mrs. C. Douglas Webb
Miss Marjorie T. Siapno	Mr. and Mrs. Frederick S. Webster
Mrs. Lawrence D. Silvernale	Mr. and Mrs. Robert M.
Miss Edith Sircom	Weidenhammer
Ms. Karyn E. Smith	Mr. Fern G. Wendt
Mr. and Mrs. R. Neil Smith	Mr. and Mrs. Harold I. Westcott
Dr. and Mrs. Raymond Smith	Mrs. Howard Wheeler
Ms. Margery N. Snyder	Miss Frances E. Whitehead
Miss Laura M. Standifer	Mr. and Mrs. Ross Whitney
Mrs. Edmund A. Stanley	Mrs. Vivian Wildman
Dr. and Mrs. James V. Stewart	Mr. and Mrs. Edward M. Williams
Mrs. Arthur Stockstrom	Mr. and Mrs. Robert A. Williams
Mr. and Mrs. Hugh Lamar Stone	Mrs. George Wohl
Mrs. L. G. Stone	Mrs. Ralph O. Wood
Mrs. Thomas A. Stone	Mrs. Josephine O. Woodbury
Mr. and Mrs. Robert Strasser	Mr. and Mrs. John B. Wright
Mr. and Mrs. John F. Strayer	Mrs. William C. Wright
Mr. and Mrs. Dexter Strong	Mrs. David Yerkes
Mrs. Patricia Styles	Mr. and Mrs. William K. Yost
Miss Margherita Tarr	Ms. Marian C. Young
Miss Regina Tarr	Mr. and Mrs. Russell A. Young
Mrs. Margaret M. Taylor	

FINANCIAL CO-SPONSORS: SMITHSONIAN
NATIONAL ASSOCIATES REGIONAL PROGRAM

PEORIA, ILLINOIS

Caterpillar Tractor Company	First Federal Savings Bank and
Commercial National Bank of Peoria	Loan Association of Peoria

MILWAUKEE, WISCONSIN

Albert Trostel & Sons Company	Cutler-Hammer, Inc.
Allen-Bradley Company	First Wisconsin National Bank
Allis-Chalmers Corporation	Harnischfeger Corporation
Badger Meter, Inc.	Herman Falk Memorial Foundation
Bucyrus-Erie Company	Marine National Exchange Bank

Financial Co-Sponsors, Regional Program—continued

Marshall & Ilsley Bank
Northwestern Mutual
Life Insurance Company
Rexnord, Inc.

Wisconsin Electric Power Company
Wisconsin Gas Company
Wisconsin Telephone Company

DETROIT, MICHIGAN

The Bundy Foundation
The Ford Motor Company Fund
General Motors Corporation
Manufacturers National Bank
of Detroit

National Bank of Detroit
Parke, Davis and Company
Stroh Brewery Company

SEATTLE, WASHINGTON

Alaska Airlines
The Boeing Company
The Bon Marché
PACCAR, Inc.
Pacific National Bank of Washington

Peoples National Bank of Washington
Rainier National Bank
SAFECO Corporation
Seattle-First National Bank

DENVER, COLORADO

Ideal Basic Industries

Mountain Bell

MINNEAPOLIS-ST. PAUL, MINNESOTA

Curtis L. Carlsen Foundation
Dayton Hudson Foundation
First Bank System, Minnesota Affiliates
General Mills Foundation
Honeywell
International Multifoods Corporation
Minneapolis Star & Tribune Company
Minnesota Gas Company
Minnesota Mining and Manufacturing
Company

Northern States Power Company
Northwest Bancorporation
Northwestern Bell Telephone
Company
Northwestern National Life
Insurance Company
Peavey Company
The Pillsbury Company
St. Paul Dispatch & Pioneer Press

APPENDIX 9. *List of Donors to the Smithsonian Institution in
Fiscal Year 1977*

The Board of Regents and the Secretary of the Smithsonian Institution join with the entire staff in thanking all of the Institution's friends for their generous financial support and for their gifts to the collections. If perchance the name of any donor has been omitted from the following list, it is an inadvertence and in no way diminishes the Institution's gratitude. Many gifts were received from donors who prefer to remain anonymous; the Smithsonian wishes to thank them for their generosity.

OFFICE OF THE SECRETARY

SPECIAL PROJECTS

Donors to the Furnishings Collection

- Arpad, Michael, Washington, D.C.: two oil portraits by E. Frazer Andrews.
Brown, Peter Mack, Washington, D.C.: Empire drop-leaf table.
Ching-Hua, Shou, Hong Kong, British Crown Colony: Chinese painted scroll.
Clark, Sylvia, Washington, D.C.: pair of bell jars of mounted birds.
Cleveland, George M., Tamworth, New Hampshire: Regency desk originally owned by President John Quincy Adams.
Howland, Richard H., Washington, D.C.: cottage bedroom suite; three Gothic Revival armchairs.
Kruger, Jennifer C., Albuquerque, New Mexico: Elizabeth Revival side chair.
Medinger, Elizabeth (estate of): Colonial Revival writing table and six chairs; oriental rug, Empire armchair, oil portrait.
Riggs National Bank, Washington, D.C.: roll top desk by J. K. Rishel Furniture Co., Williamsport, Pennsylvania.
Stark, Lucy C., Uniondale, Pennsylvania: Elizabethan Revival side chair.

SCIENCE

CHESAPEAKE BAY CENTER FOR ENVIRONMENTAL STUDIES

Donor of Financial Support Ms. Carol Guyer

NATIONAL AIR AND SPACE MUSEUM

Donors to the Collections

CENTER FOR EARTH AND PLANETARY STUDIES

- American University Library: 40 lantern glass slides from 1918 Lick Observatory photographs of the moon.
Imogene McCausland: 5 color paintings of moon rock thin sections.

DEPARTMENT OF AERONAUTICS

Adams, Paul W.: Norden bombsight prototype.
American Airlines: Boeing 707 model.
Antique Airplane Association: Japanese aircraft engine.
Australian Embassy: Royal Australian Air Force insignia.
Baas, Michael R.: American Airlines aircrew badges.
Bonelli, Mrs. Piero: Navigational sextant.
Campbell, Mrs. George W.: Life vest from USS *Macon*.
Carey, Colonel E. F., Jr.: Medals commemorating Lindbergh's flight.
Davis, T. H.: Boeing 737 model.
Delta Airlines: Lockheed L-1011 model.
Donaldson, Rev. F. L. P.: Gyroscopic inclinometer, World War I, and 1930 pilot's license.
Doolittle, James H.: USAAF World War II uniform.
Gaynor, Brig. Gen. Robert M.: USAAF insignia.
General Electric Co.: CF6 fanjet engine.
Greenamyre, Darryl: Grumman F8F-1 *Conquest I*.
Hall, Theodore A.: Elevator rib, Bell XP-59; cam shaft, Curtiss Reims Racer.
Hamilton Standard Div., United Technologies: Hamilton Standard model propeller.
Harris, Norma L.: Delta Airlines stewardess uniform.
Howard, Roland M.: Piper J-3 Cub.
Japan Air Lines: Stewardess uniform.
James, Teresa D.: Service uniform.
Karen, Jay Frazee: Pan American purser's uniform.
Lampert Foundation: Anti-G suits.
Larkford, Mrs. Gladys: "Hindenburg" cup and saucer.
Loening, Grover, estate: Loening memorabilia.
Lopez-Garcia, Zalo: Lindberg banquet menu.
Moore, Mrs. Halsey S.: Civilian flight clothing, c.1927.
Morehouse, Silas A.: Antique propeller.
Moro, Mrs. Francis: Metal aircraft skis.
National Airlines: Boeing 727 model.
Parsons, Mrs. Edwin C.: Uniform and accessories, Lafayette Escadrille, World War I.
Piff, Celia: Civil Air Patrol insignia.
Rattner, Arnold: Martin B-10 model.
Royal Air Force, Great Britain: Battle of Britain tableau.
Ryder, Roger F.: World War II recognition models.
Smith, Stanley H.: Uniform, U.S. Army helicopter pilot, Viet Nam.
Trans World Airlines: Boeing 707-331B model.
Walshe, Mrs. Elqyn: Ford tri-motor can chairs.
Walton, Nancy Bird: De Havilland Leopard model.
Western Airlines: Douglas M-2.

DEPARTMENT OF ASTRONAUTICS

Barlow, Ronald and Douglas Drexler, Centereach, New York: Star Trek memorabilia and replicas.
Museum of Science, Boston: Apollo guidance and navigations optical unit.
Thiokol Corporation, Elkton, Maryland: Bullpup A and B rockets; Collections of early Reaction Motors, rockets and parts.
Mount, Wadsworth W., Warren, New Jersey: Grapnel rockets and equipment.
Bell Aerospace, Buffalo, New York: Minuteman propulsion equipment.
Rockwell International, Downey, California: Minuteman guidance package.
USAF Hospital, Edwards AFB, California: MOD spare suit and accessories.

USAR Armament Museum, Eglin AFB, Florida: Mighty Mouse rocket.
Estes Industries: Rocket models.
Jones, Jean, Alexandria, Virginia: Discoverer 17 Recovery parachute.
Director of Quality Control, Royal Arsenal, Woolwich: Congreve rocket models.
White, Robert L., Alexandria, Virginia: Plastic rocket models.
Union Carbide Corp., Oak Ridge, Tennessee: Apollo Lunar Surface Return Container components.
National Aeronautic Association, Washington, D.C.: Money carried on Apollo flights; Apollo-Soyuz Test Program Record Book.

LIBRARY

Archibald, Robert J., Needham, Massachusetts: NC-4 photographic album.
Balchen, Mrs. Bernt, Chappaqua, New York: Autographed envelope with signatures of Bernt Balchen and Floyd Bennett.
Bodine, John W., Morrisville, Pennsylvania: Color transparencies of Ford Tri-Motor.
Buranelli, Felicity, New York, New York: Rudyard Kipling medal.
Crome, Ernest, Queensland, Australia: Historic envelopes bearing the signatures of Amelia Earhart and Fred Noonan posted Darwin, Australia, June 29, 1937, the last of any records of the fatal "Round the World Flight"; another envelope has the signatures of Mrs. Eleanor Roosevelt and Captain Roy Pickering, who piloted the Liberator bomber across the Pacific in 1943, when Mrs. Roosevelt visited the troops in the battle zones.
Dillenbeck, John Charles, Brackney, Pennsylvania: Sheet music, *Lindbergh, the Eagle of the U.S.A.*
Fiske, Mrs. Gardiner, Southern Pines, North Carolina: Folio of color prints on the "Moon Hoax" designed by Italian artists in Naples in 1836, based on the discoveries by Sir. John Frederick William Herschel. Eighteenth-century oil painting on ballooning by an unknown French artist.
Giurco, Loredana Sgueglia, New York, New York: "Moon Lady Ball" memorabilia and "Round Moon and Star" tile.
Grinberg, Paul, Jr., Bethesda, Maryland: *New York Times*, May 20, 1927, newspaper.
Hanley, Honorable Julian R., Warsaw, New York: Dole race to Hawaii photographic album.
National Aeronautics Association, Washington, D.C.: Archival files of world aerospace records.
Raabe, Petricia, McLean, Virginia: Charles Lindbergh plate, commemorating his transatlantic flight May 20-21, 1927.
Schumaker, Terry, Carbondale, Illinois: Photographic slides of the Apollo missions, 70 space postcards and Apollo 7 to 17 vinyl decals.
Science News, Inc., Washington, D.C.: Archival files of aerospace and astronomical data.
Space Photos, Houston, Texas: Complete set of space slides.
Steen, Richard, Washington, D.C.: Robert Osborn cartoons and other naval air memorabilia.
Thaden, Louise M., High Point, North Carolina: Women in aviation autographed photographs.
Tuttle, Dr. Frederick B., Washington, D.C.: Aerospace education books and set of all NASA educational publications.
United States Navy. Naval Historical Center, Washington, D.C.: Aeronautical report of tests conducted on wind-tunnel models of projected naval aircraft.
Wheaton, Elmer P., Portola Valley, California: Rocket and guided missile memorabilia.

Williamson, William, Belize City, Belize: Collection of 50 Charles A. Lindbergh commemorative stamps.

Donors to the NASM Art Collections

During the year, forty-five offers to donate works of arts were made to the National Air and Space Museum. After careful review, the following works were accepted.

Balchen, Mrs. Bernt: Eight drawings and watercolors by the late Bernt Balchen.

Bayless, Raymond (artist): Twelve miniature paintings of aircraft and lighter-than-air ships.

Butler, H. Russell Jr.: Two paintings by Howard Russell Butler, *The Earth as Seen from the Moon*, and *The Eclipse of 1923*.

Chamberlin, Craig (artist): *Soring II*, a three-dimensional painting.

Charles A. Lindbergh Memorial Fund Committee: *Lindbergh Arrives Over Paris*, a reproduction of a painting by Robert Carlin.

Cooke, Mrs. H. Lester: 21 paintings and drawings from the collection of the late H. Lester Cooke.

Edward Gottlieb and Associates, Ltd.: *Memorial to Fallen Spacemen*, a sculpture by Paul Van Hoeydonck.

Fiske, Mrs. Gardiner H.: *The Aerostat*, a painting by an unknown artist.

Ortlip, Paul (artist): Four documentary drawings of the Apollo 12 and 14 programs.

Sharp, Anne (artist): *Moonshot I*, a print.

Solomon, Jack: *Captain Eddie* and *Flying Fool*, lithographs by Merv Corning.

Speiser, Stuart: *NC-4*, a painting by Edward Wilbur.

TRW Defense and Space Systems Group: *Robert H. Goddard* and *Wilbur and Orville Wright*, collages by John Desatoff.

Venezuela: *Delta Solar*, an architectural sculpture by Alejandro Otero.

Wang, Ming (artist): *Full Blast* and a scroll painting.

NATIONAL MUSEUM OF MAN, CENTER FOR THE STUDY OF MAN,
NATIONAL ANTHROPOLOGICAL FILM CENTER

Donors of Financial Support

Waletzky, Dr. and Mrs. Jeremy P.: in support of field studies of child behavior and human development in isolated cultures.

Women's Committee of the Smithsonian Associates: in support of research film studies in Nepal.

Rachelwood Foundation: to support research film studies of the Kayapo Indians in Brazil.

Epstein, Mrs. Lionel C.: toward support of ongoing research film studies in Brazil.

Donors and Collaborative Acquisitions

Melville J. Herskovits Library of Northwestern University Library: 34,000 feet of film shot by Melville J. Herskovits in Africa and the Caribbean.

Jones, Clifford Reis: 3,376 feet of film documentation on art, ritual, and drama in South India.

Baker, Aloha W.: 4,000 feet on the Bororo tribe of Matto Grosso, Brazil, shot in the 1920s.

Tokyo String Quartet: Tape recordings of eight performances at the Corcoran Gallery of Art using the rare seventeenth-century Amati instruments.

NATIONAL MUSEUM OF NATURAL HISTORY

Donors of Financial Support

Dr. R. Tucker Abbott
Anonymous
Bausch & Lomb
John D. Conklin
David N. Damkaer
Thomas J. Delendick
Diamond Shamrock Corporation
Dow Chemical
Eberbach Corporation
Exxon Corporation
Frederick County Rock and Mineral
Club
Sumner Gerard Foundation

Dr. Gordon Gibson
The Griffis Foundation, Inc.
Bertha I. M. Gudelsky
Gayle A. Heron
Mrs. Amy E. Higgins
National Capital Shell Club
National Geographic Society
Mrs. S. Dillon Ripley
St. Joe's Mineral Company
Sperry and Hutchinson Company
Mrs. Daniel E. Tolbert
Robert A. Vines

Restricted Trust Fund Donors

Canfield Fund.
Chamberlain Fund.
Drake Fund.
Roebing Fund.
Springer Fund.

Virgil Hillyer Fund.
Walcott Fund.
National Aeronautics and Space
Administration Fund.

Donors to the National Collections

INSTITUTIONAL

Aarhus University, Herbarium
Jutlandicum, Denmark.
Academy of Natural Sciences
of Philadelphia.
Academy of Sciences, USSR.
Academy of Sciences, California.
Adelaide, University of.
Adelphi, University of.
Agriculture, U.S. Dept. of:
Agricultural Research Service;
Forest Service Herbarium.
Agriculture, University of,
The Netherlands.
Alabama Power Company.
Alberta, University of, Canada.
Albion College.
Allan Hancock Foundation.
Allyn Museum of Entomology.
Alpine Exploration.
American Museum of
Natural History.
Amoco Production Company.
Architect of the Capitol, U.S.
Arizona State University: Herbarium.
Arizona, University of.
Arkansas University Herbarium.
Atomic Energy Commission, U. S.
Auburn University.

Auckland University, New Zealand.
Australian Museum, Australia.
Baltimore Zoo, City of.
Battelle Pacific Northwest Laboratories.
Belgrade, University of, Yugoslavia.
Bergen, University of, Norway.
Bermuda, Biological Station.
Bernice P. Bishop Museum.
Biosystematics Research Institute,
Canada.
Black Hills Minerals.
Boston University.
Botanical Museum and Herbarium of
the State University, The Netherlands.
Botanisches Museum Berlin-Dahlem,
West Germany.
Bradeanum Herbarium, Brazil.
Brigham Young University.
British Museum of Natural History,
England.
British Phosphate Commissioners,
Singapore.
Bundesanstalt für Materialprüfung,
West Germany.
Bureau de Recherches Geologiques et
Minières, France.
C. G. Stone Arkansas Geological
Commission.

California Institute of Technology.
 California Polytechnic State
 University.
 California State University.
 California, University of. Scripps
 Institution of Oceanography.
 Cambridge, University of, England.
 Canada, Centre for Mineral and
 Energy Technology.
 Canada, Geological Survey of, Canada.
 Canberra Botanic Gardens, Australia.
 Canterbury, University of, New Zealand.
 Cape Town, University of, South Africa.
 Carleton, University of, Canada.
 Carnegie Museum of Natural History.
 Case Western Reserve University.
 Center of Northern Studies, Vermont.
 Chulalongkorn, University of,
 Thailand.
 Colorado Gem and Mineral
 Company.
 Colorado University Museum.
 Colorado State University.
 Commerce, U. S. Dept. of: National
 Oceanic and Atmospheric Adminis-
 tration; Bureau of Standards.
 Commonwealth Scientific and
 Industrial Research Organization,
 Australia.
 Conchologists of the U. S. A.
 Connecticut, University of.
 Cornell University. L. H. Hortorium.
 Corning Community College.
 Corpus Christi Museum.
 Crystal Cavern Minerals.
 Crystals of India.
 Dauphin Island Sea Lab.
 Defense, U. S. Dept of: Air Force;
 Army; Navy.
 Delaware Museum of Natural History.
 Department of Scientific and
 Industrial Research, New Zealand.
 Diamond Sales Company.
 Duke University: Herbarium; Marine
 Lab.
 East Africa, University of, Nairobi
 College.
 East African Freshwater Fisheries
 Research Organization, Kenya.
 Ecole Nationale Superieure
 Agronomique, France.
 Edward J. Tripp Company.
 Empresa Brasileira de Paequisa
 Agropecuaria, Brazil.
 Environmental Protection Agency, U.S.

Escuela Nacional de Agricultura,
 Mexico.
 Essig Entomology Museum.
 Exploratie en Produktie Laboratorium,
 The Netherlands.
 Fairchild Tropical Garden.
 Fairfax Hospital.
 Field Museum of Natural History.
 Florida A & M University.
 Florida Atlantic University.
 Florida International University.
 Florida State Board of Conservation.
 Florida State Museum.
 Florida, State of.
 Florida, State of, University.
 Florida, University of. State Museum.
 Forschungsinstitut Senckenberg,
 West Germany
 Fort Wayne Children's Zoo.
 Fundacao Instituto Agronomico do
 Parana, Brazil.
 Fundacion Miguel Lillo, Argentina.
 Geological Museum, Egypt.
 Geologisk Museum-ved Kobenhavns
 Universitet, Denmark.
 Georgia, State of, Dept. of Natural
 Resources.
 Georgia, University of.
 Gettysburg College.
 Gorgas Memorial Laboratory,
 Canal Zone.
 Goteborgs Universitet, Sweden.
 Government Agriculture College,
 Indiana.
 Government Chemical Laboratories,
 Australia.
 Guelph, University of, Canada.
 Gulf Coast Research Laboratory.
 Gulf Coast Research Laboratory
 Museum.
 Gulf International Trading Company.
 Gulf Specimen Company, Inc.
 Hansen Minerals.
 Harvard University: Botanical Museum;
 Geological Museum;
 Mineralogical Museum;
 Museum of Comparative Zoology.
 Hattori Botanical Laboratory, Japan.
 Hawaii, University of: Harold L. Lyon
 Arboretum, Manoa.
 Hawaii, University of—Manoa.
 Hawaiian Electric Company, Inc.
 Health, Education and Welfare, U. S.
 Department of: Public Health Service.
 Herbario "Alberto Castellanos," Brazil.

Herbario de la Universidad de
 Panama, Republic of Panama.
 Herbario de Museum de Historia
 Natural da U.F.M.G., Brazil.
 Herbario "Barbosa Rodrigues,"
 Brazil.
 Herbario Ovalles-UCV, Venezuela.
 Herbario Vargas, Peru.
 Herbarium Vadense,
 The Netherlands.
 Heron Island Research Station
 Board.
 Hokkaido University, Japan.
 Hong Kong, University of, China.
 Idaho, State of: Department of
 Health and Welfare.
 Idaho State University Museum.
 Idaho, University of.
 India, Geological Survey of, India.
 Indiana University.
 Instituto de Botanica Darwinion,
 Argentina.
 Institut für Systematische Botanik
 der Universität, West Germany.
 Institut Royal Sciences Naturelles de
 Belgique, Belgium.
 Institut Scientifique et Technique,
 France.
 Institute for Agricultural Research,
 Nigeria.
 Institute for Botanical Exploration.
 Institute for Systematic Botany,
 The Netherlands.
 Instituto Agronomico, Brazil.
 Instituto Botanico, Venezuela.
 Instituto de Biologia, Mexico.
 Instituto de Botanica, Brazil.
 Instituto de Conservacao da
 Natureza, Brazil.
 Instituto de Pesquisa e
 Experimentacao, Brazil.
 Instituto Nacional de Pesquisas da
 Amazonia, Brazil.
 Inter-American Tropical Tuna
 Commission.
 Interior, U. S. Department of the:
 Bureau of Sports Fisheries
 and Wildlife; Fish and Wildlife
 Service; U.S. Geological Survey;
 National Park Service; Office of
 the Secretary
 Iowa State University: Herbarium.
 Iowa, University of.
 Iranian National Museum of Natural
 History.
 Island Resources Foundation, Inc.,
 Virgin Islands.
 Jamaica, Institute of, Jamaica.
 James Franck Institute.
 Jardim Botanico do Rio de Janeiro,
 Brazil.
 Jardin Botanico Dr. Rafael M. Moscoso,
 Dominican Republic.
 Johns Hopkins University.
 Justice, U. S. Department of:
 Federal Bureau of Investigation.
 Kansas, University of.
 Kennecott Corporation. *See* Southwest
 Mineral Associates.
 Kerala, University of, India.
 Kingston Polytechnic, England.
 Kobe University, Japan.
 Kristalle.
 Kumamoto University, Japan.
 Kyoto University, Japan.
 Lae, Government of Papua,
 New Guinea, New Guinea.
 Lamar University.
 Lehigh University.
 Living Design Corporation.
 Lockheed Center for Marine Research.
 Lomonosov, University of, USSR.
 Los Angeles County Museum of
 Natural History.
 Louisiana State University.
 Lund, University of, Sweden:
 Botanical Museum.
 Lutheran Homes, Inc.
 Lyko Mineral and Gem, Inc.
 Maine, University of.
 Malaya, University of, Malaysia.
 Marie Selby Botanical Gardens.
 Maryland, State of: Department of
 Research and Education.
 Maryland, University of.
 Massachusetts Institute of Technology.
 Massachusetts, University of: Herbarium.
 Max-Planck-Institut für
 Verhaltensphysiologie, Germany.
 Mayaguez, Recinto Universitario de,
 Puerto Rico.
 McMaster University, Canada.
 Memorial University of Newfoundland,
 Canada.
 Miami University.
 Michigan, University of.
 Mid-Pacific Marine Laboratory,
 Marshall Islands.
 Mineralogical Museum an SSR, USSR.
 Mineralogical Research Company.
 Mineralogisch-Petrographisches

Institut der Universitat,
 West Germany.
 Mineralogisk Museum, Denmark.
 Mineralogisk-Geologisk Museum,
 Norway.
 Minerals Unlimited.
 Ministerie van Landbouw en Visserij,
 The Netherlands.
 Ministerio de Agricultura y Granderia
 Ecuador.
 Ministerio de Economia, Industria y
 Comercio, Costa Rica.
 Ministry of Agriculture, Fisheries &
 Food, England.
 Minnesota, University of: Herbarium.
 Missouri Botanical Garden
 Herbarium.
 Missouri, State of: Department of
 Conservation.
 Monkey Jungle, Inc.
 Montshire Museum of Science.
 Moss Landing Marine Laboratories.
 Moulmein College, Burma.
 Mt. Albert Research Center,
 New Zealand.
 Musee Royal de l'Afrique Centrale,
 Belgium.
 Museo Civico di Storia Naturale, Italy.
 Museu Botanico Municipal, Brazil.
 Museu Nacional, Brazil.
 Museu Paraense Emilia Goeldi, Brazil.
 Museum für Naturkunde,
 West Germany.
 Museum National d'Histoire
 Naturelle, France.
 National Aeronautics and Space
 Administration.
 National Museum, Czechoslovakia.
 National Museum of Natural Sciences,
 Canada.
 National Museum of Victoria,
 Australia.
 National Science Museum, Japan.
 Natural History Museum, San Diego.
 Naturhistorisches Museum, Austria.
 Nebraska, University of.
 New Brunswick, University of,
 Canada.
 New England Diamond Corporation,
 England.
 New Hampshire, University of.
 New Mexico, University of.
 New Orleans, University of.
 New York Botanical Garden.
 New York Zoological Society.
 Newmont Mining Corporation.
 Normandeau Associates, Inc.
 North Carolina Marine Resources
 Center.
 North Carolina State Museum.
 North Carolina State University.
 North Carolina, University of.
 Nucleo de Nueva Esparta, Venezuela.
 Office de la Recherche Scientifique
 et Technique Outre-Mer.
 Oklahoma, City of: Zoo.
 Oklahoma, University of.
 Old Dominion University.
 Oregon, State of: Department of
 Geology & Mineral Industries.
 Oregon State University.
 Oxford, University of, England.
 Oxy Metal Industries Corporation.
 Pacific Biological Station, Canada.
 Pacific Southwest Biological Services.
 Pacific Tropical Botanical Gardens.
 Pala Properties International, Inc.
 Pet Farms, Inc.
 Phelps Dodge Corporation.
 Phuket Marine Biological Center,
 Thailand.
 Pisces Publishing Corporation.
 Plumbago Mining Corporation.
 Portobello Marine Laboratory.
 Prefeitura Municipal de Curitiba, Brazil.
 Puerto Rico, University of, Puerto Rico.
 Queen Victoria Museum and
 Art Gallery, Australia.
 Queensland Herbarium, Australia.
 Radford College.
 Research and Control Department,
 West Indies.
 Rhode Island, University of.
 Rhodes University: J.L.B. Smith
 Institute of Ichthyology.
 Rider College.
 Rijksmuseum van Natuurlijke Historie,
 The Netherlands: Rijksherbarium.
 Royal Botanic Gardens, Australia.
 Royal Botanic Gardens, England.
 Royal Ontario Museum, Canada.
 Samoa, American Government of,
 Samoa.
 San Carlos, University of, Philippines.
 San Diego Society of Natural History.
 San Diego Zoological Gardens.
 Saskatchewan, University of, Canada.
 Select Gem and Mineral Company.
 Seto Marine Biological Laboratory,
 Japan
 Simon Kriger, Inc.
 South African Museum, South Africa.

South Australia, Museum, Australia.
 South Carolina, University of.
 South Florida, University of: Herbarium.
 Southern Methodist University.
 Southern Mississippi University.
 Southwest Mineral Associates.
 Southwest Mineral Associates and Kennecott Corporation.
 St. Mary's College, Maryland.
 State Herbarium of South Australia, Australia.
 State University of New York.
 State, U.S. Department of: Agency for International Development; Office of Protocol.
 Station Marine D'Endoume et Centre d'Océanographie, France.
 Stetson University.
 Sunderland Polytechnic, England.
 Swedish Museum of Natural History, Sweden.
 Syracuse Gem and Mineral Society.
 Syracuse University.
 Systematisch-Geobotanisches Institut der Universität, West Germany.
 Tasmania, University of, Australia.
 Tennessee Technological University.
 Tennessee, University of.
 Texas A & M University.
 Texas Game and Fish Commission.
 Texas Tech University.
 Texas, University of: Herbarium.
 TMK Inc.
 Toronto, University of, Canada.
 Treasury, U.S. Department of: Bureau of Customs.
 Tufts University.
 Union Tin Mines, South Africa.
 See Pringle, Dr. I. C.
 Universidad Austral de Chile, Chile.
 Universidad Central de Venezuela.
 Universidad de Chile, Chile.
 Universidad de Concepcion, Chile.
 Universidad de Costa Rica, Costa Rica.
 Universidad de la Laguna, Spain.
 Universidad de Panama, Republic of Panama.
 Universidad del Norte, Chile.
 Universidad Nacional Autonoma de Mexico, Mexico.
 Universidad Nacional de Buenos Aires, Argentina.
 Universidad Nacional de Colombia, Colombia.
 Universidad Nacional de Cordoba, Argentina.
 Universidad Nacional del Nordeste, Argentina.
 Universidad Nacional Tecnica de Cajamarca, Peru.
 Universidade de Brasilia, Brazil.
 Universidade Federal do Rio de Janeiro, Brazil.
 Universita Degli Studi di L'Aquila, Italy.
 Universita di Messina, Italy.
 Universität Hamburg, West Germany.
 Universite d'Aix-Marseille, France.
 Universiteit van Amsterdam, The Netherlands.
 Universitetets Zoologiske Museum, Denmark.
 University de Nice, University of, France.
 University of the South.
 Vermont, University of: and State Agriculture College.
 Victoria University, New Zealand.
 Virginia, State of: Department of Health.
 Virginia Fisheries Laboratory.
 Virginia Institute of Marine Science.
 Virginia Polytechnic Institute: and State University.
 Virginia State Library.
 Volta Lake Research Project, Ghana.
 Wake Forest University.
 Walters State Community College.
 Ward's Natural Science Establishment, Inc.
 Washington, University of.
 Western Australian Museum, Australia.
 Western Carolina University.
 Western Foundation of Vertebrate Zoology.
 Western Minerals.
 Western Ontario University, Canada.
 Wetlands Institute.
 Winnipeg, University of, Canada.
 Wisconsin State University.
 Wisconsin, University of: Herbarium.
 Woods Hole Oceanographic Institution.
 Wyoming, University of.
 Zona Universitaria, Mexico.
 Zoologisches Institute der Universität Wien, Austria.
 Zoologisches Museum, West Germany.

INDIVIDUAL

- Abbott, Dr. William H.
 Adkison, Daniel L.
 Ainley, David G.
 Al-Far, Dr. D. M.
 Alexander, Mr. and Mrs. L. T.—*See*
 Kappes, J.
 Allen, Dr. H. W.
 Allison, Robert, Jr.
 Almeras, Dr. Y.
 Altenhofer, Dr. Ewald
 Amos, William H.
 Andersen, Dr. William A.
 Anderson, David
 Anderson, Robert J.
 Angle, J. P.—*See* Olson, Dr. Storrs L.
 Angell, Dr. Robert W.
 Angelo, Ray
 Aristarain, Dr. Lorenzo F.
 Ash, Dr. Sidney R.
 Ashby, Wallace L.
 Astarty, Dr. J. C.
 Aumento, Dr. Fred
 Austin, Claudia J.
 Ayers, Harvard G.
 Bailey, Dr. Richard H.
 Baker, James H.
 Ball, Dr. George E.
 Bane, Gilbert W.
 Banks, Harold H., Jr.
 Baranowski, Dr. R. M.
 Barbehenn, Kyle R.
 Barber, John C.—*See* Olson,
 Dr. Storrs L.
 Barbosa, Carlos de Prado
 Baril, Steven
 Barnard, Dr. J. L.
 Barnett, Roger C.
 Barrell, Dr. Joseph
 Barrero Aviles, Sr. Antonio
 Bartholomew, Dr. M. J.
 Bauer, Mrs. Hugo C.
 Baumann, Dr. Richard W. and
 Cross, Jarrett L.
 Bean, Dr. William C.
 Behrstock, Robert A.
 Belkin, Dr. John N.
 Benedict, Dr. Bruce R.
 Benier, Dr. Christiane Stern
 Bennett, Dr. Fred
 Bennison, Dr. A. P.
 Benson, Dr. Richard
 Bentivoglio, A.
 Bentivoglio, P.—*See* Bentivoglio, A.
 Bergman, Fred W.
 Berlinger, Bernard E.
 Beus, Dr. Alexei
 Blair, Dr. David
 Blake, Mrs. Doris H.
 Blanchard, Andre
 Blasdell, Francis S.
 Block, Dale W.
 Blount, Mrs. Percy J.
 Blow, Warren
 Blume, Dr. Richard R.
 Boerner, P. D.
 Boggs, Robert
 Bokermann, Werner C. A.
 Bolli, Dr. Hans M.
 Boone, Mrs. Connie
 Boone, Mrs. Hollis Q.
 Boothe, Billy B.
 Boucot, Dr. Arthur J.
 Bowsher, Dr. Arthur L.—*See*
 Bennison, Dr. A. P.
 Brewer, George
 Bricker, Garth
 Brinson, Gail M. and Nasca, Anthony V
 Broadley, Donald G.
 Bronnimann, Dr. Paul
 Brown, C. J.
 Brown, Dr. Harley P.
 Brown, Dr. William L., Jr.
 Browne, Joseph E.
 Brownell, Robert L., Jr.
 Bruce, Murray
 Brumbach, William C.
 Bryan, W. B.
 Buchanan, Kurt
 Budinger, Dr. Thomas F.
 Buranek, A. M.
 Burch, Mrs. Thomas A.
 Burchard, Dr. and Mrs. Ulrich
 Burgess, Dr. C. M.
 Burke, Dr. J. J.
 Burnham, Dr. Charles W.
 Burns, Jeff and Harbour, Mike
 Burreson, Dr. Eugene M.
 Bushnell, David I.
 Byers, Dr. George
 Cadee, Dr. Gerhard C.
 Calderon, Dr. Cleofe
 Campsie, Dr. John
 Canning, Kenneth
 Cannon, Bart
 Capriles, Dr. J. Maldonado
 Carlson, Dr. Ernest
 Carpenter, Mike
 Carpentier, Professor Fritz

Carr, Dr. Lloyd G. K.
 Case, Dr. Frederick W., II
 Castro, Socorro
 Causey, Dr. Nell B.
 Centala, Maxine M.
 Cernohorsky, Walter O.
 Chace, Frederic
 Chandler, J. H., Jr.
 Chapman, Dr. Philip
 Cheatum, Dr. Elmer P.
 Chen, Dr. Lain-Shen
 Child, C. Allan.—*See Manning,*
 Dr. R. B.
 Chuang, Dr. S. H.
 Ciochon, R.—*See Ross, Dr. June R. P.*
 Claffy, Mrs. Esther W.
 Clark, Dr. William
 Clark, Wayne E.
 Clarke, Dr. Arthur H.
 Clarke, Dr. J. F. Gates
 Clench, Dr. William J.
 Closs, Dr. Darcy
 Coats, Gordon A.
 Cohen, Mrs. Ann C.
 Cohen, Rebecca
 Coil, Clarence
 Coleman, Dr. Richard W.
 Collins, J. R.
 Copper, Dr. Paul
 Cornely, Guy
 Cortes, Sr. Raul
 Covell, Dr. Charles V., Jr.
 Covich, Dr. Alan
 Crabill, Dr. Ralph E., Jr.
 Cressey, Dr. Roger F.
 Crook, Dr. Wilson W., III
 Cross, Jarrett L.—*See Baumann, Dr.*
 Richard W.
 Crovo, Ellen
 Cuffey, Dr. Roger
 Cullinan, Michael
 Dahl, Dr. Arthur L.—*See Manning,*
 Dr. R. B.
 Darwin, Steven P.
 Davidson, Robert
 Davis, Cervantes
 Davis, Dr. Donald R.
 Davis, Jack R.
 Davis, Richard M. and Harvey, Dean E.
 Dawson, Dr. C. E.—*See Manning,*
 Dr. R. B.
 Dawson, J. B.
 De Gasparis, A. A.
 De Mire, Bruneau
 De Mott, Sally L.
 Degner, Drs. Otto and Isa
 De Souza Neiva, Getulio
 Del Rosario, Juane B.
 Del Solar, Dr. Enrique M.
 Delance, Dr. Jean-Henri
 Dellacasa, Giovanni
 Diaz, Humberto Granados
 Dietrich, Dr. Jacques E.
 Dietz, Robert E., IV.—*See Hevel, Gary F.*
 Dmitriev, Dr. Leonid
 Donaldson, Colin H.
 Dorsey, Mrs. Carl K.
 Downey, Maureen and Gust, Cynthia
 Doyen, Dr. John T.
 Dozier, Herbert L., Jr.
 Drever, Dr. H. I.
 Dubin, Dr. Dale B.
 Dunn, Mrs. Arthur Wallace
 Dunn, Mrs. Ethel L.
 Dunn, Peter J.
 Dushane, Mrs. Helen
 Ekis, Dr. Ginter
 Elliott, Dr. Nancy
 Embrey, Dr. Peter
 Emerick, Mr. and Mrs. Duncan
 Engleman, Dr. R. Dodge
 Enns, Dr. W. R.
 Erd, Dr. Richard
 Ernisse, Dr. John J.
 Ernst, Dr. W. G.
 Erwin, Dr. Terry L.
 Esmero, Lourdes
 Evans, Richard E.
 Ewing, Dr. Rodney C.
 Falster, Al
 Faulkner, Douglas
 Feinstein, Bernard
 Feldman, Dr. Howard R.
 Feldman, Dr. Rodney M.
 Feller, I. C.
 Ferguson, Dr. Douglas C.
 Ferguson, Dr. Lynn M.
 Ferris, Dr. Cliff D.
 Firth, E. T.
 Fischer, Capt. Carl O.
 Fischer, Dr. Roland L.
 Fischer, Joseph C.
 Fisher, George W.
 Flint, Dr. Oliver S., Jr.
 Folch-Girona, Joaquin
 Foord, Dr. Eugene E.
 Foote, Roger W.
 Ford, Virginia M.
 Fosberg, Dr. F. Raymond.—*See Sachet,*
 Marie-Hélène
 Foster, Dr. David E.
 Foy, Douglas

Francis, Carl
 Frank, Dr. Peter W.
 Franklin, Kit
 Fredriksson, Dr. Kurt
 Freed, Charles E.
 Fudali, Dr. Robert F.
 Furimsky, Dan
 Gaines, Dr. Richard V.
 Garcia, Frank A.
 Garrison, Rosser W.
 Gaspard, Dr. Danielle
 Gauri, Dr. K. Lal
 Gauthier, Gilbert
 Gazele, Mrs. Josette
 Geest, B. S.—*See* Setzer, Dr. H. W.
 Geest, J. C.—*See* Setzer, Dr. H. W.
 Gelena, Eduardo
 Gentry, Dr. Glenn
 Geoghegan, Mr. and Mrs. Philmore
 Germer, Mrs. Dorothy
 Gerstmann, Ewald
 Ghent, Dr. Edward D.
 Gibbs, Dr. Robert R.
 Girim, Dr. M.
 Glaser, Dr. John
 Glasscock, Pat
 Glenn, Dr. L. C.
 Gloyd, Howard K.
 Gold, Dr. D. P.
 Goll, Dr. Robert M.
 Goodfriend, Glenn A.
 Gordon, Dr. Dennis P.
 Grassle, Fred
 Greene, Phyllis.—*See* Greene,
 Sergeant
 Greene, Sergeant
 Greenhall, Paul and Sharon
 Greenlaw, Addison E. and Nickerson,
 Stephen
 Grelick, Gary
 Grey, L. Paul
 Griffiths, Dr. Henry J.
 Gueze, Dr. Paul
 Guidotti, Dr. Charles V.
 Gunawardhane, Dr. W. T. T. P.
 Gurney, Dr. Ashley B.
 Gust, Cynthia.—*See* Downey,
 Maureen
 Haburay, Keitz
 Haderlie, E. C.
 Halsey, Mrs. Marion S.
 Handley, Dr. Charles O., Jr.
 Hanks, Fletcher
 Hanley, Mrs. Darelyn
 Harbour, Mike.—*See* Burns, Jeff
 Hardy, Dr. Alan R.
 Hardy, Dr. D. Elmo
 Harlan, Captain Harold J.
 Harman, Professor Walter J.
 Harmatuck, Peter J.
 Harper, Raymond
 Harris, Dr. Halbert M.
 Harrison, Richard V.
 Harrold, Mr. and Mrs. Don C.*
 Hart, C. W., Jr.
 Hartgroves, William D.
 Hartman, Dr. W. D.
 Harvey, Dean E.—*See* Davis, Richard M.
 Hasinger, David J.
 Hatschbach, Dr. Gert
 Hattenschwiler, Peter
 Haugh, Dr. Bruce N.
 Hayward, Dr. Bruce J.
 Hayward, Dr. Bruce W.
 Hayward, Dr. Kenneth J.
 Head, Renee and Richmond, Robert
 Heaney, Larry R.—*See* Timm, Robert M.
 Heatwole, Harold
 Hedges, Frank R.
 Heiss, Dr. Ernst
 Hekinian, Dr. Roger
 Hentschel, Dr. Gerhard
 Herman, Dr. Fred
 Hermann, Dr. Scott J.
 Herzig, Alice
 Hevel, Gary F. and Dietz, Robert E., IV
 Heyer, Dr. W. Ronald.—*See* Zug,
 Dr. George R.
 Hieke, Dr. F.
 Higgins, Dr. Robert P.
 Hodges, Dr. Ronald W.
 Hoffman, Dr. Daniel
 Hoffman, Dr. Richard L.
 Hoffmann, Dr. H. J.
 Hogue, Dr. Charles L.
 Holder, Dr. Preston
 Holland, C. G.
 Holland, Dr. F. D., Jr.
 Hood, Mrs. Emily
 Hoover, Donald H.
 Horstmann, Dr. Klaus
 Houbrick, Dr. Richard S.
 Houser, Mrs. Gertrude
 Hovel, Haim
 Howden, Anne T.
 Howell, Dr. K. M.
 Hudson, Maxwell John
 Hueber, Dr. Francis M.

* James Smithson Society member.

Hunsucker, Mrs. Diana
 Hunter, Nelson D.
 Husband, Dr. R. W.
 Husscher, Harold
 Hutchens, Lynn
 Hynes, Paul
 Irwin, Don
 Issiki, Dr. S.
 Jackh, Eberhard
 Jackson, George A.
 Jacobson, Morris K.
 Jacot-Gruillarmod, C. F.
 Jakob, Dr. Hans
 James, Audrey M.
 Janik, Mrs. Fred
 Jennings, Dr. D. T.
 Jensen, Lauritz A.
 Johns, P. M.
 Johnson, Don S.
 Johnson, Dr. C. D.
 Johnson, Dr. Guy M.
 Johnson, Dr. J. G.
 Johnson, Dr. Victor
 Johnson, J. E.
 Johnson, Mrs. George H.
 Johnson, Paul G.
 Johnson, Ralph
 Johnstone, Shelby C.
 Jones, Barry
 Jones, Dr. Meredith L.—*See* Manning,
 Dr. R. B.; Pawson, Dr. David L.;
 Rosewater, Dr. Joseph; Provenzano,
 Dr. Anthony J., Jr.
 Jones, Frederick.—*See* Banks, Harold H.
 Jones, Jerome
 Jones, Ray S., Jr.
 Joslyn, Priscilla K.
 Jourdan, Kenneth
 Jubran, George M.
 Jungles, Gerald
 Kadlecik, John M.
 Kahler, Mrs. Laura B.
 Kane, William F.
 Kaneshiro, Shigeru
 Kanmiya, Dr. Kenkichi
 Kappes, J. and Alexander, Mr. and
 Mrs. L. T.
 Kato, Dr. Akira
 Kaumeyer, Dr. Kenneth R.
 Kay, Dr. E. Alston
 Keany, Dr. John
 Keister, Harry
 Kelly, Mackenzie L.
 Kelso, Dr. Leon
 Kendall, Elizabeth A.
 Kennedy, Daniel B.
 Kennedy, Irwin
 Kielbaso, J. W. and Pfaff
 Kimball, C. P.
 King, Dr. Robert M.
 King, Vandall
 Kinser, Edwin C.
 Kiser, Stephen
 Kiser, William S.
 Kissin, Dr. Stephen A.
 Kistner, Dr. David
 Kittle, Dr. Paul D.
 Klitz, Burton F.
 Knowlton, Dr. George F.
 Knutson, Dr. Lloyd V.
 Koch, Raymond and Lucia
 Kohlmann, Dr. Bert
 Kohn, Dr. Alan J.
 Kono, T.
 Kordos, Craig
 Kordos, George and Kordos, Craig
 Kormilev, Dr. Nicholas A.
 Korowski, Stanley
 Kosnar, Richard A.
 Kramer, Dr. Donald L.
 Krauss, Dr. N. L. H.
 Kristiansen, Roy
 Krotki, Carl
 Kues, Dr. Barry
 Kulke, Dr. Holger
 Lago, Dr. Paul
 Lal Mohan, Dr. R. S.
 Lamberson, Janet O.
 Lamberts, Dr. Austin
 Laudau, Dr. David*
 Landing, Dr. Ed
 Lang, Dr. Judy
 Larson, Ron and Kathy
 Laudon, Dr. Lowell R.
 Laverty, Mr. and Mrs. John and
 Norman
 Le Calvez, Dr. Y.
 Leakey, Mary
 Leduc, James W.—*See* McIntyre; Thomas
 J.; Murdock, Wallace, Jr.; Robbins,
 Lynn W.; Setzer, Dr. H. W.
 Lee, Dr. Sin-Che
 Lee, Harry G.
 Leftwich, Rodney
 Lehmkuhl, Dr. D. M.
 Lekagul, Dr. Boonsong
 Leobrera, Mr. and Mrs. Carlos and Fely

* James Smithsonian Society member.

Leuschner, Ronald H.
 Levy, Lester S.
 Lewandowski, Robert
 Lewis, Dr. Robert E.
 Liebherr, Jim
 Linam, Dr. Jay
 Ling, Dr. Hsin Yi
 Linkletter, Leslie
 Linsley, Professor E. Gorton
 Lo, Esther and Wong, Wendy
 Longley, Dr. Glenn
 Looney, Mrs. Ch. T. G.
 Lord, Dr. Rexford D.
 Lowrie, Dr. D. C.
 Lubbock, Roger
 Luce, Philip M.
 Luethe, R. D.
 Lukoschus, Dr. F. S.
 Lyman, Orlando H.
 Macaulay, Mrs. Sarah F.
 MacBryde, Dr. Bruce
 MacIntyre, Dr. Ian
 Macior, Dr. Lazarus W.
 Magone, Hugh
 Magrath, Mrs. Louise
 Mahone, Bill
 Mallick, Dr. D. I. J.
 Malone, Mrs. Elsie
 Mancuso, Dr. Joseph J.
 Mangeri, Angel
 Mani, Dr. M. S.
 Mankins, Dr. Jerome
 Mann-Fischer, Dr. Guillermo
 Manning, Dr. R. B.—*See* Jones,
 Dr. Meredith L.
 Mapes, Dr. and Mrs. Royal H.
 Marcus, Dr. Eveline
 Martin, Norman
 Martin, Professor Robert M.
 Mason, Dr. Brian
 Mason, David C.—*See* Tucker,
 Dr. Charles E.
 Masters, Dr. Bruce A.
 Mather, Bryant
 Matheson, K. H., Jr.
 Mathur, Dr. R. N.
 Matsui, Masafumi
 Matthews, Dr. John
 Matula, Mrs. Vincent
 Maw, Ba.—*See* Ross, Dr. June R. P.
 Maxfield, Galen H.
 Mazurkiewicz, Michael
 McClurkin, Dr. J. I., Jr.
 McConnell, Dr. Duncan
 McFarland, Dr. Craig
 McGregor, Russell C.
 McGuinness, A. L.
 McIntyre, Thomas J.—*See* Leduc,
 James W.
 McKeever, Ivan
 McKeever, Vincent
 McKinnerney, Marsha
 McKinney, James F.
 McLean, Dr. James H.
 McClellan, Jack H.
 McPherson, Dr. J. E.
 Medenbach, Dr. Olaf
 Medler, Dr. John T.
 Melloy, George F.
 Melson, Dr. William G.
 Merwin, Bertrand H.
 Messing, Charles G.
 Metzler, Eric H.
 Michener, Dr. C. D.
 Middleton, Robert
 Mikhalevsky, Colonel Alex
 Miller, Carl F.
 Miller, Dr. Walter B.
 Miller, Dr. William E.
 Mills, Claudia
 Milne, Professor Lorus J.
 Milton, Dr. Charles
 Minch, Dr. Edwin W.
 Mingo, Terry M.
 Moldenke, Dr. Harold N.
 Montgomery, Earl
 Moore, Dr. Donald R.
 Moore, Dr. Paul B.
 Moore, Lyman
 Moore, Robert
 Morey, Dr. Elsie Darrah
 Morey, William J.
 Morris, Robert C.
 Morse, Dr. S. A.
 Moser, Dr. John C.
 Mulaik, Dr. Stanley B.
 Muller, Professor Klaus J.
 Mulloy, Dr. William
 Munroe, Dr. D. D.
 Murdock, Wallace P., Jr.—*See* Leduc,
 James W.
 Mutt, Jose A. Mari
 Muzik, Katherine
 Naftule, Roland
 Naples, Donald G.
 Nasca, Anthony V.—*See* Brinson,
 Gail M.
 Natland, Dr. James
 Negendank, Dr. Jorg F. W.
 Nichols, Richard H., Jr.
 Nickel, Dr. Ernest H.

Nickerson, Stephen.—*See* Greenlaw,
 Addison E.
 Nicolson, Mrs. Alice C.
 Nigrini, Dr. Catherine A.
 Nimms, Dr. Andrew P.
 Noble, Harold A.
 Nolf, Dr. Bruce
 Nutting, William
 Obodda, Herb
 Odell, Reverend J. Mark
 Ogden, Dr. James
 Ogle, D. W.
 Olson, Dr. Storrs L.—*See* Angle, J. P.;
 Barber, John C.
 Oman, Dr. P. W.
 Opler, Dr. Paul
 Osgood, Dr. Cornelius
 Owen, Robert P.
 Paddock, Mrs. Andrew Billings
 Padilla, Manuel Cruz
 Palloni, Pam
 Palmer, Douglas
 Papezik, Dr. V. S.
 Parker, Dr. Robert H.
 Parker, Professor Bruce C.
 Parmelee, Eleanor P.
 Passaglia, Dr. Elio
 Patterson, Mrs. Jefferson
 Pauszek, Mrs. F. H. S.
 Pawson, Dr. David L. *See* Jones,
 Dr. Meredith L.
 Payne, Dr. Jerry A.
 Pearson, Dr. David L.
 Pearson, Robert
 Peck, Dr. Stewart B.
 Peigler, Richard
 Penna, John L.
 Penner, Mr. and Mrs. Stanford
 Pequegnat, Dr. Willis
 Perault, Dr. Guy
 Perkins, Dr. Edwin M.
 Pessagno, Dr. Emile A., Jr.
 Petersen, Dr. James J.
 Petuch, Edward J.
 Pfaff, Mr.—*See* Kielbaso, J. W.
 Phebus, George E., Jr.
 Phillips, R. W.
 Pierite, Joseph A., Jr.
 Pilcher, Tommy
 Pinch, William W.
 Pine, Ronald H.
 Pingenot, Ron
 Pinhey, Dr. Elliot
 Platt, Stephen
 Pletsch, Dr. Donald J.
 Pollack, Joseph A.
 Ponder, Dr. Winston F.
 Porter, Dr. Charles C.
 Post, Dr. James L.
 Potter, Charles W.
 Pratt, Dr. Harry D.
 Pratt, Dr. William L.
 Prew, Mrs. Laurie
 Priest, Amel
 Principe, William L.
 Pringle, Dr. I. C. and Union Tin Mines
 Provenzano, Dr. Anthony J., Jr.—
See Jones, Dr. Meredith L.
 Pulawski, Dr. W. J.
 Puleston, Dr. Dennis E.
 Purnell, Harold W. T. and Purnell,
 Mr. and Mrs. L. M.
 Purnell, Mr. and Mrs. L. M.—
See Purnell, Harold W. T.
 Quiggle, Dean
 Radwin, Dr. George E.
 Rageot, Roger
 Rahn, Russell A.
 Ralph, C. J.
 Rapalus, Joseph S.
 Ratcliffe, Dr. Brett C.
 Rathbun, Dr. Galin B.
 Ray, Dr. Clayton E.
 Reddell, Dr. James
 Rehder, Dr. Harald A.
 Reinert, Dr. John F.
 Rice, Cliff
 Rice, Dr. Mary E.
 Richards, Dr. R. Peter
 Richert, Dr. Thomas H.
 Richmond, Robert.—*See* Head, Renee
 Riddick, Mrs. Marceille
 Riesenbergs, Dr. Saul
 Rimpoche, Mynak
 Ripley, Dr. S. Dillon
 Ripley, Mrs. S. Dillon
 Ritter, Donald A.
 Robbins, C. B.—*See* Setzer, Dr. H. W.
 Robbins, Lynn W.—*See* Leduc, James W.
 Robert, Mrs. Donald (Frances)
 Roberts, Mrs. Allen
 Robinson, Dr. A. G.
 Rohrlich, Professor Vera
 Rolston, Dr. L. H.
 Roper, Dr. Clyde F. E.—*See* Gibbs,
 Dr. Robert R.
 Rosado Neto, Dr. G. H.
 Rosenberg, William
 Rosenburg, Dr. Laurence C.
 Rosewater, Dr. Joseph.—*See* Manning,
 Dr. R. B.; Jones, Dr. Meredith L.
 Ross, Dr. H. H.

Ross, Dr. June R. P.; Maw, Bo;
 San, Bo; and Ciochon, R.
 Ross, Martha J.
 Rossano, Sr. Carlini
 Rosser, Debbie
 Rossetto, Eng. Agro. Carlos Jorge
 Roth, Dr. Louis M.
 Rothstein, Joe
 Ruetzler, Dr. Klaus
 Ruhle, Dr. George
 Rulien, Neal
 Rushin, Carol J.
 Sachet, Marie-Hélène and Fosberg,
 Dr. F. Raymond
 Sahama, Dr. Th. G.
 Sainfeld, Dr. P.
 Saito, Dr. Tsunemasa
 Salasoo, Dr. I.
 San, Bo.—*See* Ross, Dr. June R. P.
 Sando, W. J.
 Sato, Dr. Masataka
 Sauleda, R. P.
 Sazima, Dr. Ivan
 Schaffner, Dr. Joseph C.
 Scheltma, Dr. Rudy
 Schlepp, Eugene E.
 Schmitt, Dr. Waldo L.
 Schroeder, Dr. Robert E.
 Schroeder, Jack R.
 Schueler, Frederick W.
 Schuh, Joe
 Schupp, Mr. and Mrs. William
 Schuster, Guenter A.
 Scudder, G. G. E.
 Seiglie, Dr. George A.
 Serna, Hno. Marco A.
 Setzer, Dr. H. W.; Robbins, C. B.;
 Leduc, J. W.; Geest, J. C.; Geest, B. S.
 Shapiro, Dr. Arthur M.
 Shapiro, Mrs. Rosalie
 Shaver, Robert G.
 Shaw, J. Kevin
 Sherman, William W.
 Shipley, J. R.
 Shojima, Yoichi
 Shourd, Dr. M. L.
 Siddons, Derek C.
 Sigurdsson, Dr. Haraldur
 Silleck, Mrs. H. Garrison
 Silsby, Scott
 Simkin, Dr. Thomas E.
 Simpson, Dr. Beryl
 Sinkankas, John
 Sklar, Mrs. Hilde
 Slater, Dr. James A.
 Smith, Charles G.
 Smith, Dr. Bob C., II
 Smith, Dr. Edward Laidlaw
 Smith, Frederick L.
 Smith, Haywood
 Smith, J. H., Jr.
 Snelling, Roy
 Spencer, Douglas R.
 Spengler, William F.
 Sperry, H. M.
 Spilman, T. J.
 Springer, Dr. Victor G.
 Stack, Richard
 Stanford, Dr. Dennis J.
 Steiner, Warren E.
 Stephan, Karl
 Stephenson, Quentin J.
 Stewart, John
 Stewart, Robert H.
 Steyskal, George C.
 Stockwell, Dr. Henry P.
 Stump, Adam
 Sun, Dr. Wesley K. C.
 Swabe, Richard
 Sweeney, Michael J.
 Sweibel, Julius
 Swindle, Lewis J.
 Switzer, Dr. George
 Szczytko, Stan
 Taggart, John H.
 Taki, Dr. Iwao
 Thomas, M. C.
 Thompson, Marrion E.
 Thompson, Mrs. Lee E.
 Thorington, Dr. Richard W., Jr.
 Thornton, Mrs. Sue
 Tilles, David
 Tillman, Dr. C. G.—*See* Bartholomew,
 Dr. M. J.
 Timm, Robert M. and Heaney, Larry
 Torrey, Michael
 Truedsson, Ake
 Trussell, Mrs. E. K.
 Tsukiyama, Hiroshi
 Tsuneki, Dr. K.
 Tucker, Dr. Charles E.—*See* Mason,
 Dr. David C.
 Tunnell, Dr. John W., Jr.
 Tuominen, Professor Heikki
 Turner, Mr. and Mrs. Milton
 Ulmer, Dr. Gene
 Valley, Dr. Karl
 Valley, Gerald
 Van Der Vecht, Dr. J.
 Van Loon, Mr. and Mrs. Philip S.
 Van Wambeke, Dr. L.
 Vidarte, Dr. Luis Muniz

Vigle, Gregory
Vinet, Leonor
Violovich, Dr. N. A.
Vitaliano, Dr. and Mrs. Charles J.
Vlodavetz, Professor V. I.
Voegeli, David.—*See* Banks,
Harold H.
Vokes, Dr. Emily H.
Von Neumann, Robert
Voshell, Dr. J. R., Jr.
Wah, Fong Yun
Walker, M. O.
Walsh, Philip S., Jr.
Ware, Donald C.
Waren, Anderson
Warriner, Dr. Richard B.
Watkin, Robert
Watson, Dr. George E., III
Weber, Mrs. Marcelle
Weiss, Fredric
Welbourn, W. Calvin
Welker, Harold
Wellington, J. W.
Wells, Dr. John W.
Wenzel, Robert
Weske, Dr. John S.
Westcott, Richard
Wetmore, Dr. Alexander
White, Dr. Graham B.
White, John Sampson
Whitmore, Dr. Frank C.
Whitmore, Robert
Widener, Millard E.

Wielgus, Ronald S.
Wilhelm, Kurt A.
Wilkerson, Edith C.
Willever, Donald
Williams, Mr. and Mrs. L. T.
Williams, Prosper J.
Wilson, Dr. E. O.
Wilson, Dr. Mildred S.
Wilson, R. B.
Witt, William L.
Wittmer, Dr. Walter
Wolfenden, Mrs. Hugh H.
Womble, Edgar A., Jr.
Wong, Wendy.—*See* Lo, Esther
Word, Jack
Wray, Dr. D. L.
Wright, Dr. J. B.
Wright, Dr. Steve
Yamaguchi, Dr. Masashi
Yedlin, Neal
Yepez, Dr. F. Fernandez
Yoder, Dr. H. S., Jr.
Young, Jane S.
Young, M. E.
Yount, Victor
Zardini, Rinaldo
Zavortink, Dr. Thomas J.
Zektzer, Jack
Zibrowius, Dr. Helmut
Zug, Dr. George R. and Heyer,
Dr. W. Ronald
Zweifel, Dr. Richard

NATIONAL ZOOLOGICAL PARK

Donors of Financial Support

ORGANIZATIONS

- S. I. Women's Committee: to purchase animals for the collection.
Noble Foundation: to support research at the Conservation and Research Center, Front Royal, Virginia.
World Wildlife Fund: for a study to reintroduce bird species to a tropical forest preserve.
SAFE International: for a study to reintroduce bird species to a tropical forest preserve.
National Science Foundation: to study macaques *Macaca sinica* in Sri Lanka.
Marine Mammal Commission: to study the social behavior of the Harbor Seal.
Schering Corporation: to analyze antibiotic treatment of exotic animals.

INDIVIDUALS

- Mary B. Scheible
Dr. Ellinor H. Behre
Louisa B. Parker
Members of the Navy's Anti-Ship
Missile Defense Project
Hazel S. Mays
Ash Lawn
Various *in memorium* of
Dr. Paul Tamarkin

RADIATION BIOLOGY LABORATORY

Donors of Financial Support Eppley Foundation

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

Donors of Financial Support

Max. E. Fleishman Foundation Polaroid Foundation

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

Donors of Financial Support

The Henry B. and Grace Doherty Foundation
Exxon Corporation
Edward John Noble Foundation

HISTORY AND ART

ARCHIVES OF AMERICAN ART

Donors of Financial Support

\$100 and above

Mrs. Don E. Ahrens	Mrs. Robert B. Clarke
Mr. Arthur G. Altschul	Mr. and Mrs. Ralph F. Colin
Mr. and Mrs. Denton Anderson	Mr. Gardner Cowles
Mr. and Mrs. Wendell W. Anderson, Jr.	Mr. Trammell Crow
Mr. and Mrs. Louis C. Baker	Miss Ruth Cumming
Mr. Richard Brown Baker	Mrs. Chester Dale
Mr. W. M. Banks	Mr. and Mrs. Keith Davis
Mrs. Harry A. Batten	Mrs. Maria M. de Medina
Mrs. James H. Beal	Mrs. Albert de Salle
Mrs. J. W. Beatman	Mrs. Amy Dobronyi
Mr. and Mrs. John A. Benton	Mrs. Frederick E. Donaldson
Mr. and Mrs. James A. Beresford	Mr. James F. Duffy, Jr.
Mr. and Mrs. James Biddle	Mr. and Mrs. Saul H. Dunitz
Mrs. Anne H. Bing	Mr. and Mrs. George M. Endicott
Mr. and Mrs. Theodore D. Birnkrant	Mr. Phil Esposito
Mr. and Mrs. H. Glenn Bixby	Mr. Bayard Ewing
Mr. and Mrs. Paul Borman	Mr. and Mrs. Walter W. Fisher
Mrs. Rena Bransten	Mrs. Frederic C. Ford, Jr.
Mr. Charles L. Bricker	Mr. and Mrs. Marshall Fredericks
Mr. and Mrs. William W. Brown	Mrs. John S. French
Mr. J. Lawrence Buell, Jr.	Dr. and Mrs. E. G. Fischer
Mrs. Helen R. Busch	Mr. and Mrs. Lawrence A. Fleischman
Mr. and Mrs. E. A. Cafiero	Mrs. Gilchrist Fletcher
Dr. and Mrs. Sidney E. Chapin	Mr. B. H. Friedman
	Miss Elizabeth H. Fuller

Mr. David L. Gamble
Mrs. Helen Getler
Gilman Foundation, Inc.
Mr. Howard Gilman
Mrs. Bernard F. Gimbel
Mr. and Mrs. Seth M. Glickenhau
Mrs. James L. Goodwin
Mr. Alan L. Gornick
Mr. and Mrs. William T. Gossett
Mr. Charles M. Grace
Miss Frances A. Gray
Mr. and Mrs. Lester Gruber
Mrs. Marina Kellen Gundlach
Mr. Leo S. Guthman
Mr. and Mrs. Walter Haas
Mrs. Robert G. Hartwick
Mrs. Carleton C. Hascall, Jr.
Mrs. Raymond Hawtin
Mr. and Mrs. E. H. Heaton
Mrs. Barbara Whipple Heilman
Mrs. Horace S. Heim
Mr. and Mrs. Charles E. Hickman
Mrs. George C. Hixon
Mr. and Mrs. Raymond J. Horowitz
Dr. and Mrs. J. Stewart Hudson
Mr. Frederick G. L. Huetwell
Mr. and Mrs. A. D. Hulings
Mr. and Mrs. James Humphry III
IBM Corp. Design & Arts Program
Mrs. Hepburn Ingham
Mrs. Harrison Ivancovich
Mrs. Augusta Jacobson
Mrs. Edward C. Johnson Foundation
Mrs. Henry C. Johnson
Mr. Alfred Winslow Jones
Mr. and Mrs. A. Frederick
Kammer, Jr.
Mrs. Virginia W. Kampf
Mr. and Mrs. Jacob M. Kaplan
Mr. and Mrs. Seymour Karbal
Mr. and Mrs. Bernard Karpel
Mr. and Mrs. Martin A. Kellman
Mrs. Eugene Kingman
Mr. and Mrs. Gustav D. Klimann
Mrs. Patricia Knode
Mr. and Mrs. Harry L. Koenigsberg
Kriendler-Berns Foundation
Mrs. Roger Kyes
The Lachaise Foundation
Mrs. William D. Laurie, Jr.
Mr. Rensselaer W. Lee
Mr. Arthur D. Leidesdorf
Dr. and Mrs. I. H. Leopold

Mr. and Mrs. Harold Love
Mr. and Mrs. Russell Lynes
Mrs. James B. Mabon
Mrs. Elizabeth H. Maddux
Mrs. Percy C. Madeira, Jr.
Mrs. R. A. Magowan*
Mrs. Frederick C. Matthaei
Mrs. E. T. Meredith, Jr.
Drs. Paul and Laura Mesaros
The Metropolitan Museum of Art
Mrs. H. A. Metzger
Mr. Byron R. Meyer
Mr. and Mrs. Irving J. Minett
Mr. and Mrs. A. Minowitz
Dr. and Mrs. Coleman Mopper
Galeria Juana Mordo, S.A.
Mr. and Mrs. T. A. Murphy
Miss Emily Nathan
Mrs. Eldo Netto
Mr. and Mrs. Roy R. Neuberger
Mr. and Mrs. Frank J. Nussbaum
Mr. and Mrs. Samuel Orosnik
Mr. Alfonso A. Ossorio
The Pace Gallery of New York, Inc.
Mrs. Bliss Parkinson
Mr. and Mrs. Jack Perlmutter
Mr. and Mrs. H. Lynn Pierson
Mrs. Isabelle Polacheck
The Honorable and Mrs.
Leon B. Polsky
Mr. and Mrs. William J. Poplack
Mr. and Mrs. M. P. Potamkin
Mr. and Mrs. Albert B. Ratner
Mrs. Dorothy H. Rautbord
Mrs. Paul H. Reinhardt
Mr. and Mrs. E. P. Richardson
Mr. and Mrs. Chapin Riley
Mrs. John D. Rockefeller, 3rd.
Dr. and Mrs. Michael Rollins
Mrs. Madeleine H. Russell
Mr. and Mrs. Walter Scheuer
Dr. and Mrs. P. J. R. Schlessinger
Mr. and Mrs. Allan B. Schmier
Mr. and Mrs. Thomas Schoenith
Mr. and Mrs. Alan E. Schwartz
Mr. and Mrs. Frederick A. Sharf
Mrs. Allan Sheldon III
Mr. and Mrs. Peter M. Shontz, Jr.
Signature Art Galleries, Inc.
The George M. & Mabel H. Slocum
Foundation
Mrs. J. Scott Smart
Mrs. Lawrence M. C. Smith

* James Smithsonian Society member.

Mr. and Mrs. Emmett G. Solomon
Mr. and Mrs. Maury L. Spanier
Mr. and Mrs. Edgar Stanton
Mr. and Mrs. A. J. Steel
Mr. and Mrs. Mark C. Stevens
Mr. Stanford C. Stoddard
Mr. Philip A. Straus
Mr. and Mrs. John W. Stroh
Mr. Emmanuel Sulkes
Mr. and Mrs. A. Alfred Taubman
Mr. Eugene Victor Thaw
Mrs. Louis Tishman
Mr. and Mrs. Carsten Tiedeman

\$500 and above

Mrs. Laura M. Bishop
Mrs. Ruth H. Brown
Mr. George P. Denny, Jr.
Mrs. Henry Hamilton Dewar
Mrs. Allan D. Emil
Mrs. George R. Fink
Mrs. Theodore E. Gordon
Mr. Harold E. Grove
Mr. Joseph H. Hirshhorn*
Mr. Donelson F. Hoopes
Mrs. Mary M. Hupfel
Miss Milka Iconomoff
The JDR 3rd Fund
Mr. and Mrs. John S. Judd
Mr. and Mrs. Sidney Katzman

\$1,000 and above

Mr. and Mrs. Edwin A. Bergman
Mr. and Mrs. John L. Bradley
Mr. and Mrs. John L. Bunce
The Bundy Foundation
Dr. and Mrs. Irving F. Burton
Dr. and Mrs. Burrill Crohn
Mr. and Mrs. F. Arnold Daum
Davies Charitable Trust
Mr. and Mrs. Christian de Guigne
Mrs. Alfred C. Harrison
Benson and Edith Ford Fund
Mr. and Mrs. Walter B. Ford II
(Walter & Josephine Ford Fund)
Mr. and Mrs. William E. Friedman
Mr. and Mrs. Stanley Glen
Mr. and Mrs. Henry L. Goldberg
Dr. and Mrs. Joseph R. Goldyne
Mr. and Mrs. F. Herbert Hoover
Mr. and Mrs. Albert A. List

Mr. and Mrs. Lynn A. Townsend
Mrs. Hooper Truetner
Mrs. Nelson Urban
Mr. C. Carter Walker, Jr.
Ms. Suzanne Walker
Mrs. W. Clyde Ward
Mr. and Mrs. Joseph Weinstein
Mr. and Mrs. Jerome M. Westheimer
Mr. and Mrs. R. J. Williams
Mr. and Mrs. Warren R. Woodward
Mr. Edward M. M. Warburg
Mr. and Mrs. William J. Young, Jr.

Kennedy Galleries, Inc.
Mrs. Samuel C. Kohn
Mr. Earle Ludgin
Mr. and Mrs. Robert L. McNeil, Jr.
Mrs. Henry Pearlman
Mrs. Cornelia Perry
Miss Shirley Polykoff
Mrs. Dana M. Raymond
Mrs. Edwin Rosenthal, Jr.
Mrs. Joseph Rubin
Mrs. Arthur A. Seeligson, Jr.*
Mr. Stephen Shalom
Mr. and Mrs. Roy W. Stevens
Mr. Mason B. Wells
Mrs. Guri Lie Zeckendorf

Athol McBean Foundation
Mr. and Mrs. Richard Manney
Mr. and Mrs. William A. Marsteller
Dr. and Mrs. Abraham Melamed
Mr. John F. Merriam
Mr. and Mrs. Dan Oppenheimer
Mr. William S. Picher
Mr. and Mrs. Harry Rubin
Mr. and Mrs. Carl L. Selden
Mr. and Mrs. Howard Smits
Mrs. Otto L. Spaeth
Stroh Brewery Foundation
Mrs. Richard H. Tyler
Mrs. Paul Wattis
Mrs. Osborne White
Mrs. Robert Ready Williams
The Wyeth Endowment
for American Art

* James Smithsonian Society member.

\$5,000 and above

The Brown Foundation, Inc.	John A. McCarthy Foundation
Mrs. W. Rodman Fay	McGregor Fund
Eleanor Clay Ford Fund	Edward John Noble Foundation
Mr. and Mrs. Gilbert H. Kinney*	Viola E. Bray Charitable Fund
Howard and Jean Lipman Foundation	(Mr. and Mrs. William L. Richards)

\$10,000 and above

Mr. Richard Manoogian	Matilda R. Wilson Fund
-----------------------	------------------------

Donors to the Collections

Blake, Mrs. Doris H.: papers of Doris H. Blake and Sidney F. Blake
Boardman, Richard S.: taped reminiscences.
Brooks, Mrs. Robert A.: papers of Robert A. Brooks.
Buechner, Mrs. Helmut: papers of Helmut Buechner.
Buzas, Martin A.: taped reminiscences.
Cook, Peter G.: papers of Edwin A. Preble.
Evans, Clifford: taped reminiscences.
Givens, Earl and Stuart: 12-volume set of the *Smithsonian Scientific Series*.
Hobbs, Horton H.: taped reminiscences.
Kauffman, Erle G.: taped reminiscences.
Mann, Mrs. William: papers of William Mann.
Ray, G. Carlton: records of the Marine Mammal Program of the U.S.
International Biological Program.
Schmitt, Waldo L.: papers of Waldo L. Schmitt.
Whipple, Fred L.: papers of Fred L. Whipple

*COOPER-HEWITT MUSEUM OF DESIGN
AND DECORATIVE ARTS*

Donors of Financial Support (\$1,000 and above)

ASID Educational Foundation	Lauder Foundation
Mrs. Helen W. Buckner	The Magowan Family Foundation
Burlington Industries Foundation	Herman Miller
CBS	Margaret C. Miller
Classical America	The Ohrstrom Foundation
Mr. and Mrs. John A. Corroon	Arthur Ross Foundation
Eva Gebhard Gourgard Foundation	Steelcase, Inc.
Janet A. Hooker Charitable Trust	Stroheim & Romann
Lucy Wortham James Memorial —NY Community Trust	

Donors of Works of Art

Mrs. Edward Armstrong	Mrs. Monroe Percy Bloch
Mr. Fritz Bamberger	Mr. Edmond Casarella
Mr. Will Barnet	Mr. Christopher Castelli
Mr. Charles Baskerville	Mrs. Stephen Clafin
Miss Alice Baldwin Beer	Colonial Farmhouse Restoration Society of Bellrose, Floral Park, N.Y.
Mr. Reynard Biemiller	Condotti, Ltd.
Miss Julia Black	Mr. Allyn Cox
Mr. Robert Blaich	

* James Smithson Society member.

Mrs. Wendell H. Cox
Mr. Freeman Crow
Defense Mapping Agency,
Washington, D.C.
Mr. Ismar David
Miss Alice DeLamar
Mrs. Barbara Orvis de Zalduondo
Ms. Barbara Dodsworth
Mr. Stan Dufford
Mr. Kenneth Duprey
Mr. Melvin Dwork
Mr. Robert Ebendorf
Mrs. Susanna Ebendorf
Mr. Richard Etts
Mr. Hal Fiedler
Mr. M. Roy Fisher
Mrs. J. A. Q. Franks
Friends of Drawings and Prints
Friends of Textiles Fund
Mrs. Cora Ginsberg
Mr. and Mrs. Stephen Globus
Mrs. John L. Handy, Jr.
Mrs. Patricia G. Harris
Mrs. Allison Bisgood Harwood
Mrs. Frans van Heemstra
Mrs. Stanley Herzman
Mrs. Wayne Higby
Mr. and Mrs. Frederick D. Hill
Mr. Earle Hiscock
Miss Jane Howell
Mrs. John Jay Ide
Mr. Arata Isozaki
Dr. James P. Johnson
Johnson Wax Co.*
Mr. Alexander Karpilov
Mr. Robert C. Kaufmann
Mrs. Karen Johnson Keland
Mrs. Richard Koehne
Mr. Joseph Konopka
Mrs. Richard Kraus
Mr. Wanyne E. Kulesa
Lanerie Agnona
Jack Lenor Larsen, Inc.
Mrs. Camille Lehman
Mr. Davie Lerner
Ms. Riki Levinson

Mr. Simon Lissim
Mr. and Mrs. J. Russell Lynes
Mrs. Susan Martits
Mrs. William H. Mathers
Miss Dorothy Mathews
Mr. Roswell Miller*
Mrs. Charles Montgomery
Mrs. Gillian Moss
National Museum of Modern Art,
Tokyo, Japan
New York State Historical Society,
Cooperstown, N.Y.
New York School of Design, Library
Mr. Elliot Offner
Mr. Abraham Ostrow
Estate of Ella Ostrowsky
Mrs. Elizabeth Page
Mr. Charles Patterson
Mr. Charles S. Payson
Mr. Paul Peter Piech
Mr. James Prestini
Mr. W. G. Pulliam
Mr. Boguslav Raphael
Reed Wallpaper Company
Ronnie Lace Sales
Mrs. Howard J. Sachs
Mrs. George Salter
Mr. Karl Schrag
Mrs. Celia Siegel
Stanley Siegel Collection
Miss Helen Snyder
Mr. Milton Sondag
Miss Margaret Spader
Mrs. Lila Tyng
Mrs. Jeanette van Raalte
Mr. Thomas B. Van Steenberg
Mrs. Clara Waldeck
Mrs. Marie Louise Wanner-Quarti
Miss Jena Weiss
Mrs. Joan Wheeler
Mr. and Mrs. Arthur Wiesenberger
(deceased)
Mrs. Russell Wise
Mr. John B. Wisner
Ms. Jeanyee Wong
Miss Honor Youngs

FREER GALLERY OF ART

Donors of Financial Support

The Chisholm Foundation
Felix and Helen Juda Foundation
The Midgard Foundation

John S. Thacher
Weatherhead Foundation
Ellen Bayard Weedon Foundation

* Pending.

Donors to the Harold P. Stern Memorial Fund

The Chisholm Foundation
Carl S. Cohen
Naomi Dallen
Mr. and Mrs. Stanley J. Ellias
Garamond Pridemark Press, Inc.

Dorothy F. Hagberg
The Island Foundation
Richard W. Weatherhead
The Weatherhead Foundation

Donors to the Study Collection

Bryan, Clarence: Near Eastern Lustreware vase.
Department of Justice: Pair of six-panel Japanese screens by Tachibana Tenkei.
Dobkin, Herman J.: Japanese painting, *Self-Portrait of Priest Juin*.
Juwon, Irving: Chinese pottery figurine and Chinese pottery marbled tripod with wooden cover.
Pope, John A.: Shards from the Far East.
Takashi, Yagioka: Japanese painting by Shunzan.

HIRSHHORN MUSEUM AND SCULPTURE GARDEN

Donors of Works of Art

Mr. Joachim Jean Alberbach,
Old Westbury, New York
Batus, Green Farms, Connecticut
Mr. and Mrs. Bernhard Bechhoefer,
Washington, D.C.
Mr. and Mrs. Leigh B. Block,*
Chicago, Illinois
Mrs. Michael Brenner,
New York, New York
Mrs. Rosalind Browne,
Naples, Florida
Mr. Arthur W. Cohen,
New York, New York
Mr. Thomas Evans,*
New York, New York
Mr. Edward Giobbi,
Katonah, New York
Harriet Griffin Gallery,
New York, New York
Mr. Joseph H. Hirshhorn,*
Naples, Florida
Leonard Hutton Gallery,
New York, New York
Dr. and Mrs. George A. Hyman,
New York, New York

Martha Jackson Gallery,
New York, New York
Louis K. Meisel Gallery,
New York, New York
Mr. Vincent Melzac,
Arlington, Virginia
Mr. Minoru Niizuma,
New York, New York
Mr. Max Protech,
Washington, D.C.
Mrs. Hans Richter,
Locarno, Switzerland
Mrs. Marion O. Sandler,
Oakland, California
Schoelkopf Gallery,
New York, New York
Smithsonian Resident Associates,
Washington, D.C.
Mr. William Scott III,
New York, New York
Mr. Bardyl R. Tirana,
Washington, D.C.
Mr. Eugene L. Vogel,
Washington, D.C.

NATIONAL COLLECTION OF FINE ARTS

Donors of Financial Support

Corning Glass Works Foundation
(Thomas Buechner)
R. Philip Hanes, Jr.
Bartlett H. Hayes

Thomas C. Howe
David Lloyd Kreeger,
Charitable Foundation
The Magowan Family Foundation

* James Smithson Society member.

Mrs. Robert Magowan *
Margaret D. McKee
Paul Mellon
Charles E. Merrill Trust
Ogden Pleissner

George B. Tatum
Henry R. Traubitz
University of Chicago Club of
Washington
Otto Wittmann

Donors of Works of Art

Mr. and Mrs. William Howard Adams	Marjorie D. Martinet
Mrs. Elsie K. Belmont	Mrs. Robert B. Mayer
Elizabeth C. Benton	Mr. and Mrs. Kevin McCann
Dr. and Mrs. Roy W. Benton	Frank McClure
Brandywine Graphic Workshop	Mrs. Roderick Mead
Mrs. Adelyn D. Breeskin	Vincent Melzac
Dr. and Mrs. Canter	George C. Miller and Son, Inc.
Mrs. Otis Chatfield-Taylor	Jay Moon
Louis Cheskin	Mrs. B. J. O. Nordfeldt
Mrs. Marion McLean Davis	Estate of Ella Ostrowsky
Estate of George Demetrios	Mrs. Jefferson Patterson *
Mr. and Mrs. Dale Holbrook Dorn	Reverend De Wolf Perry
Werner Drewes	Albert M. Pitcher
Robert B. Frank	Mrs. Elizabeth Pollock
Beatrice Fenton	Mrs. Charles Prendergast
The Fursman Foundation	Estate of Melville Price
Wende and Geoffrey Gates	Abraham Rattner *
Thomas George	Mrs. F. E. Reinert
Mrs. Irma Goldbery	The Honorable Nelson Rockefeller
Mr. and Mrs. Red Grooms	Phyllis Rosen
Maurice Grosser	Mrs. Edgar L. Rossin
Lena Gurr	Dr. James Rudel
R. Philip Hanes, Jr.	Daisy Shapiro
Mr. and Mrs. R. Philip Hanes, Jr.	Mrs. Mortimer Slotnick
Mrs. Richard L. Harkness	Society of Washington Printmakers
Susan Morse Hilles	William Speiller
Mrs. Jaquelin H. Hume	Lou Stovall
William Huntington	Malby Sykes
Martha Jackson Gallery	Mr. and Mrs. George B. Tatum
Mr. and Mrs. Frank Jager	Page Tigar
Mrs. Marion Javits	Mrs. Beulah Tomlinson
Mr. and Mrs. Jacob Kainen *	Washington Print Club
Jacob Kainen *	Mrs. Bessie Wenger
Mrs. Morris Kantor	Robert O. Werlich
Mrs. Harry Katz	Woodward Foundation
Mr. and Mrs. Louis Kaufman *	Mahonri Sharp Young
Mr. and Mrs. Julian Kaye	The Zorach Children
Mrs. Sidney Lawrence	

NATIONAL MUSEUM OF HISTORY AND TECHNOLOGY

Donors of Financial Support

MISCELLANEOUS UNRESTRICTED GIFTS

American Military Institute
Belgian Embassy
Stover and Kaufman

United States Commission on
Military History

* James Smithsonian Society member.

DOUBLEDAY LECTURE SERIES

Doubleday & Company, Inc.

DIVISION OF POSTAL HISTORY

Amos Press, Inc. Mr. Vincent E. Hoffman
British Broadcasting Corporation Mr. Sidney N. Shure

DIVISION OF NUMISMATICS

Amos Press, Inc. The Bass Foundation

DIVISION OF GRAPHIC ARTS

Gertrude Schweitzer

DIVISION OF COSTUME AND FURNISHINGS

The Honorable Corinne C. Boggs Butterick Fashion Marketing Company
Mrs. Warren E. Burger

DIVISION OF CERAMICS AND GLASS

Mr. Henry Arnhold Brooks and Hope B. McCormick
Mr. and Mrs. John Mayer Foundation
Dr. Hans Syz *

DIVISION OF TRANSPORTATION

Mr. Donald H. Berkebile Washington, D.C. Chapter
National Railway Historical Society, Mr. John H. White

DIVISION OF MILITARY HISTORY

Colt Industries Charitable
Foundation, Inc.

HALL OF AMERICAN MARITIME ENTERPRISE
EXHIBITION

American Commercial Barge Line Company	General Stevedores, Inc.
American Institute of Marine Underwriters	Gladders Barge Line, Inc.
Ashland Oil, Inc.	Professor George W. Hilton
Bailey Coke Transport, Inc.	Ingram Barge Company
Bath Iron Works Corp.	S. C. Loveland Co., Inc.
Canal Barge Company, Inc.	The Ohio River Co.
Cargo Carriers, Inc.	Propeller Club of Ponce, Puerto Rico
Crowley Maritime Corp.	C. J. Thibodeaux and Co.
Delta Concrete Company	The Tobacco Institute, Inc.
Dillingham Corp.	Union Mechling (Dravo)
Dixie Carriers, Inc.	Upper Mississippi Towing Corp.
Joseph C. Domino, Inc.	The Valley Line Company
Exxon Company, U.S.A., Marine Department	Womens Propeller Club, Port of New York
General Electric Co.	Womens Propeller Club of the U.S., Port of Honolulu

* James Smithson Society member.

Friends of Music at the Smithsonian

Miss Catharine F. Absalom	Rainer K. Kraus
Mr. Mark Adler	Charlotte Y. Krever
Mrs. Elaine Albright	Mr. and Mrs. James F. Lawrence
Mrs. John W. Auchincloss	Miss Helen E. Levy
Mr. and Mrs. Richard Baks	Mrs. James Mallory
Mr. and Mrs. William P. Bebbington	Ella Jean Mark
Mr. and Mrs. B. A. Bernard	Mrs. Joan Martens
Celeste Bettino	Dr. and Mrs. Herbert C. Mayer
Miss Frances B. Bowen	Dr. John Russell Mason
Harold H. Bredell	Miss Jean V. McGue
Mrs. A. A. Brickhouse	Capt. and Mrs. Roger E. Melick
Mrs. Percy W. Brown	Mrs. Loudon Mellen
Helen B. Burnham	Mr. and Mrs. W. E. Meyer
Mr. and Mrs. James H. Cannon	Mrs. Stephen V. C. Morris
Ms. Peggy Carrigg	Mrs. Martha A. Nelson
Mr. and Mrs. George M. Carroll	Forbes W. Polliard
Mr. and Mrs. Timothy W. Childs	Elizabeth Protti
Mrs. Winston Childs	Dr. and Mrs. Lawrence J. Radice
Mrs. Beatrice Ciccarone	Mrs. Sylvia F. Rekoon
Mrs. Thomas K. Cline	Miss Wilma Sain
Mr. and Mrs. George A. T. Donely	Bernard L. Schleeter
Henry D. Duarte	Mr. and Mrs. William A. Shirer
Benjamin S. Dunham	Mr. and Mrs. Milton L. Shurr
Mr. and Mrs. Robert J. T. Emond	Mrs. John Farr Simmons
Mrs. William Rodman Fay	Davidson Sommers
Mr. and Mrs. H. C. Foehl	Mrs. Genevieve P. Sowa
Dr. and Mrs. Robert H. Furman	Mrs. Francis A. Smith
Paul E. Geier	Mr. and Mrs. E. E. Stauber
Mrs. Isabella Grandin	Miss Bessie Stein
Alfred M. Granum	Steinway & Sons
Andrew Hamilton	Miss Mildred F. Stone
Mrs. Elizabeth Verner Hamilton	Mr. and Mrs. John Tebbel
Miss Martha B. Hancock	Mr. and Mrs. Richard H. Thompson
Charles C. Hart	Mrs. Allan H. Treman
Mrs. Charles E. Hewitt, Jr.	Dr. Betty M. Twarog
Mr. and Mrs. G. H. Himelhoch	Mr. and Mrs. Bronson Tweedy
Mrs. Ruby Moss Hopkins	Mrs. John A. Watts
Capt. E. E. Johnson	Mr. and Mrs. Robert H. Weber
Emily W. Jones	Mr. and Mrs. John M. Wells
Mr. and Mrs. John B. Jones, Jr.	Adelaide R. Willis
Mrs. R. Keith Kane	Mrs. Keith S. Wilson
Dr. and Mrs. Seymour Kaufman	Barbara and Thomas Wolf
Mr. and Mrs. Harry Keller	

Donors to the National Collections

- 1977 Inaugural Committee (through Bardyl Tirana): 30 objects associated with the 1977 inaugural activities (1977.0461).
- Mrs. Sarah Helen Abraham: 1 knife used for operation on President Garfield and 1 set including hypodermic, flashlight, plate (part of door on Grant's temporary tomb) (1977.0265).
- Acacia Mutual Life Insurance Company (through Martin M. Weaver and George R. Walter): a collection of 119 items documenting an IBM 7070 and an IBM 1401 computer system used by the donor (1977.0456).
- Adcraft Manufacturing Company (through Frank J. Sitzberger): 19 buttons

- produced for the 1976 political campaign (1977.0262).
- Rita J. Adrosko: doll, "Nanette," and rubber doll head (322704).
- A-G-A Corporation (through Richard Malikowski): 1 geodimeter, model 2 (321733).
- Government of Aitutaki, Aitutaki Post Office, Postal Accounts (through the Resident Agent's Office): 3 mint souvenir sheets and 19 mint postage stamps of Aitutaki (322738).
- Honorable Carl Albert: 4 gavels with historical association and a photograph portrait of donor (1977.0050).
- G. Norman Albree: 3 circular calculating rules designed by the donor and 1 Japanese abacus (321674).
- Richard M. Alden: 1 magnetic drum from an RW-300 computer (309502).
- Elizabeth H., Mary Stewart and Richard H. Allen, Jr.: see Mrs. Eleanor Allan Hanson.
- Allcraft Tool and Supply Co., Inc. (through D. F. Shannon): 4 silversmith's mallets and 8 silversmith's hammers (1977.0544).
- Allen-Mitchell and Company (through Frank P. Mitchell): matched pair of steam engine indicators, and 1 other indicator (1977.0352).
- John S. Alley: 2 annual reports of the Town Officers for West Tisbury, Massachusetts. 1923 and 1927 (1977.0289).
- Malcolm G. Allison: 1 working model of 6-inch naval deck gun, WWI, made by the donor (1977.0096).
- Mrs. Abbie Alston (through Mrs. James A. Mathews): 2 glass catheters, 1 thermometer, 2 syringes with needles and cases, 2 IV clamps, 1 nozzle, 1 atomizer bulb, and 1 clamp (322660).
- Dr. Ugo Amaldi: 1 scintillation hodoscope (1977.0531).
- American Bank Note Company (through Oliver Lednicer): 1 ruling machine, 1 pantograph, 1 stone press with litho stone transfer, 1 stone press—transfer, and 1 rotary ruling machine (1977.0486).
- American Bureau of Shipping (through Robert T. Young): 1 copy of *Record of American and Foreign Shipping, 1870* (1977.0616).
- The American Congress of Rehabilitation Medicine (through Creston Herold): 6 patent models including 2 artificial legs, 1 collapsible crutch, 1 prosthesis—below elbow, 1 arm and forearm splint, and 1 wooden crutch (309032).
- American Institute of Marine Underwriters (through Carl E. McDowell): 2 brass stamps, 2 date stamps, 1 model of packet ship *Underwriter*, 1 insurance policy on sloop *Katy* 1792, and 1 insurance policy on schooner *Farmer* 1788 (322690).
- American Legion Post No. 73: 1 US National Flag, 13 star, 1860-1890 (1977.0348).
- American Revolution Bicentennial Administration (through Richard Bain): 1 Bicentennial Flag (1977.0081).
- Mrs. H. Wilson Ames: See Ann F. Comm.
- Mrs. Lorraine C. Anderson: 3 stoles, 3 purses, 1 pair of hatpins, 1 coat, 1 cloak, 1 shawl, 1 headband, 1 hat, and 1 lounging outfit (1977.0043).
- J. D. Andrew, Jr.: 17 items of memorabilia pertaining to the Hog Island Shipyard during WWI (1977.0003).
- Annin & Company (through Walter P. Kelley): 6 flags including Bennington Flag, Betsy Ross, The Culpepper Minute Men, Bunker Hill Flag, The Gadsden, and Pine Tree (1977.0035).
- Anonymous: 1 boy's shirt, 1845-53 (320762); 1 man's suit (320857); 4,712 specimens including, from Venezuela: 4 classical covers, 385 used classical postage stamps, 1603 mint classical postage stamps, and from Guinea: 2720 mint postage stamps (322750); 2,422 mint postage stamps of Venezuela (322761).

- Anti-Friction Bearing Manufacturers Assoc. (through James J. Whitsett): collection of 246 miscellaneous bearings and parts (1977.0585).
- Ann Antik in memory and to perpetuate the name of Marie Antik (through Richard L. Spire II, Esq.): 24 textile and related items (1977.0161).
- Bruno Antolini: 1 Democratic-Republican button (323443).
- The Army Times Publishing Company (through Melvin Ryder and Robert E. Schweitz): 3,206 US Army distinctive insignia, c. WWII (1977.0019).
- Henry Arnhold: 2 Meissen cup and saucer sets, 1 set with Watteau decoration and the other set with 2 landscapes (1977.0222).
- Stanley Artrite: 2 copies of a composite portrait of the Presidents with facsimiles of their signatures (1977.0130).
- Colonel Whitney Ashbridge: 1 document "The Uniform Dress of the Captains and Certain Other Officers of the Navy of the United States," August 27, 1802 (1977.0318).
- Colonel Whitney and Mary G. N. Ashbridge: 1 pair of man's breeches and 2 woman's dresses (316364).
- Atlantic Mutual Insurance Co. (through Harold A. Eckman): 1 underwriting desk (1977.0612).
- Mrs. Katherine McCarthy Aumann: 2 pairs of woman's shoes, 1 pair of girl's sandals, and 2 woman's hats (318992).
- Reserve Bank of Australia: group of Australian specimen banknotes (320775).
- Mrs. Lucille D. Ayres: guest ticket to the 1924 Democratic National Convention (322726).
- Waldemar A. Ayres: 1 calculator (310129).
- Sydney J. Ayrey: 1 Lippincott steam engine indicator (1977.0353).
- Mrs. Luzelle Sisk Babb (through Ida Love Taylor Jones, Judith W. Bebar, Dr. Charles A. Remond): 1 corner cupboard used in Tennessee, first half of 19th century (1977.0124).
- Mrs. Louise N. Baca: 1 Spanish "Jo.Lo.Ar" pistol (317940).
- Mrs. Alice W. Badger: 3 19th-century American red earthenware mugs (1977.0128).
- Dr. and Mrs. Theodore L. Badger: 2 stoppered, glass ewers decorated with a stenciled, enamel design of flowers and leaves (1977.0345).
- Alice Crew Baker: Boy's dress, c. 1887 (322597).
- Government of Barbuda, Philatelic Bureau, Post Office: 7 first day covers and 17 mint postage stamp of Barbuda (323587).
- Mr. and Mrs. William H. Barnes: 9 glass negatives of Naval personnel and Naval activities, c. 1900 (321686).
- Joseph W. Barret, Jr.: 1 bottle of swamp-root (323634).
- Charles L. Bartlett: 1 parlor center table with marble top, Belter type (1977.0201).
- Douglas Bashioum (through Michael Malloy): 1 1-ounce bottle of mercury (1977.0652).
- Irma Batroh: 34 personal items of Michael Batroh including 1 personal diary kept during WWI, 1 continuous service certificate in a leather case and 32 postcards of US and foreign scenes (321634).
- Battle Creek Sanitarium Hospital (through Angela L. Bates, H. H. Hill, and Vernon L. Small): 2 Kellogg chairs, 1 vibrating chair, 1 spa glass, and 1 sinusoidal bath device (319025).
- Mrs. Serena S. Baum: catalogue of ceramics, pictures, etc. (316331).
- Bruce Bazelon: collection of 125 insignia dating from WWII through the 1960s (1977.0083).
- Sarah Beach: 2 anti-Vietnam war protest posters painted by the donor (1977.0267).
- Beacon Terminal Corporation (through Sherman E. Weiser): underwriter's steam fire pump, Knowles (1977.0266).

- Mrs. Marcia Humphreys Beat: 1 hand-tooled cowhide depicting events of historical interest during the past 200 years (1977.0205).
- Mrs. Mildred N. Beckert: see Mrs. Jean B. Thompson.
- Mrs. Melba Trilli Beckner, Delmo F. Trilli, Guido P. Trilli: Pearl jobbing press No. 11, manufactured by Golding & Co., Boston, circa 1900. Includes 6 rollers, 2 chases, and an inking fountain (1977.0066).
- Clay P. Bedford: 1 English Collier flintlock revolver (1977.0271).
- Virginia Beets: 1 book entitled . . . *To Form A More Perfect Union* with subtitle *Justice For American Women* (323576).
- Eugene F. Behlen: 1 loom, 1 spool rack, and 1 reel (1977.0141).
- Edith A. and The Honorable Taylor G. Belcher: earthenware spittoon, US -1 (323616).
- Mrs. Barbara Bell: 1 postcard photograph of President and Mrs. Harding and 1 photo of The Capitol in winter (1977.0424).
- Mrs. Josephine T. Bell: 1 stained glass window made by W. H. Constable, London, England, 1876 (323498).
- Dr. Rosario Beauperthuy de Benedetti (through Alfred E. Grumwell): Medal honoring Dr. Louis Beauperthuy, the discoverer of the yellow fever vector (323575).
- Thomas M. Benner: 1 Davis and Kidder magneto electric machine (321651)
- Steven M. Bergstein: 1 terrestrial telescope spyglass (322641).
- City of Berkeley Police Department (through Elijah G. Roger): 1 Berkeley Police Dept. "Lie Detector" (322715).
- Berkshire International Corporation (through Donald R. Schwartz): 27 pairs of stockings and 2 stocking boxes (1977.0369).
- Ann A. Bernatitus: the first Legion of Merit Medal ever awarded by the Armed Forces, presented to the donor during WWII, and associated items including an enamel miniature of the medal, a blue leather case, a framed citation for the medal signed by Secretary of the Navy Frank Knox, and a photograph of the donor at the time of award (321620).
- Florence S. Berryman in memory of Clifford Berryman: 1 Teddy Bear pin and 124 original drawings of cartoons by Clifford Berryman (322733).
- Gerald M. and Harriet B. Best: 1 plantation locomotive "Olomana," 1883 (1977.0647).
- Dr. Laurence O. Binder: 34 photographs by Paul L. Anderson, 3 photographs by others, 1 Kodak enlarger, 1 Kodak timer, 17 bottles of photographic chemicals, 1 letter to Paul and Mollie Anderson, and 4 letters to Paul Anderson (320680).
- Bio-Design, Inc. (through Merrill Callum): 1 Bio-Design ECG Transmitter Model TX-100 (1977.034).
- Mrs. William McC. Blair, Jr.: 4 woman's designer dresses, 2 woman's designer ensembles, 1 woman's designer pantsuit, 1 woman's designer coat, 1 woman's designer dress with jacket, 1 woman's designer suit, 1 woman's designer blouse, 5 pairs of woman's shoes, 2 woman's designer hats, 3 woman's purses (323581).
- Charles Blitzer: 1 first day cover and 1 presentation folder of the American Revolution Bicentennial postage stamp of India (322757).
- Mrs. Sam Blodget: fiberglass souvenir from 1939 World's Fair (1977.0454).
- Mrs. Reba Harden Bloom: 1 clear colorless glass pitcher engraved with a portrait of a dog and an inscription (323611); 9 piece desk set, and 1 household receipt book c. 1890's (1977.0197); 1 form letter and 1 envelope, portions of which were typed on the typewriter at the Philadelphia Centennial Exposition (1977.0340).
- Jean B. Bloombergh: 1 photograph of Dr. Mary Edwards Walker, Civil War

- Surgeon and only woman ever to win the Congressional Medal of Honor (1977.0564).
- Alfred Bloomingdale: collection of cartoons referring to Diners Club credit cards (320774).
- Board of Underwriters of New York (through Carl E. McDowell and S. A. Fain): the first 6-minute books from the Board of Underwriters of New York, 1 seal of the National Board of Marine Underwriters, and 1 oil portrait of William Nielson (1977.0639).
- The Honorable "Lindy" Boggs: 5 objects relating to the donor and her chairing the Democratic National Convention (1977.0001).
- Dr. Russell V. Bowers: 1 ceramic penicillin culture pot (1977.0654).
- Doris M. Bowman: 1 red damask tablecloth, 1 wool work mat, and 1 spool rack (1977.0475).
- Mrs. A. J. Brachman: 2 suits, 2 pairs of shoes, and 1 jacket (319887).
- Colonel Robert D. Branagan: specialized series of "Barter Units" scrip issued by the United States Army Headquarters Command Barter Center in Frankfurt-Main, Germany 1946-1948. (1977.0416).
- M. Lelyn Branin: 27 examples of Warne and Letts kiln furniture (archeological fragments) (1977.0165).
- Banco Central do Brasil: Brazilian ten-cruzeiros silver coin, 1975. (323633).
- Mrs. G. A. Brelin: 1 woman's coat 1927, by Hattie Carnegie.
- Charles B., Col. John E., Paul N. and William H. Bridge: see Ann F. Comm. (1977.0047).
- Arthur Broaddus: see Mildred E. Cooke.
- Brodhead-Garrett Co. (through Thomas K. Rogers): 2 sculptor's hammers (1977.0545).
- Brookhaven National Laboratory: atomic beam apparatus (318942).
- Brookstone Company (through Susan Glover): 1 brass mallet and 1 carpenter's mallet (1977.0546).
- Estate of J. Louis Browning (through Virgil V. Shoop): 1 tall clock, c. 1850 (1977.0350).
- Franklin R. Bruns, Jr.: 1,316 mint and used postage stamps and commercial covers of the world (1977.0231).
- Captain Charles E. Brush: 1 Keuffel and Esser duplex slide rule with extra index (1977.0370).
- Claudia K. Brush: 1 curtain stretcher (1977.0133).
- Mrs. Richard B. Buchanan: 1 pressed glass cruet with gilded decoration (1977.0381).
- Mrs. Lynn Buck: 8 unfinished silver objects, 2 pressboard templates, and 2 pencil on paper designs all made by Dwight Dillon (1977.0123).
- Honorable Warren E. Burger: printer's proof of the Court's opinion and separate opinions in the "Buckley" case (321725).
- Helen S. Burlingham: 1 souvenir spoon (322703).
- Burlington Northern (through A. M. Rung): 1 locomotive gage lamp (1977.0493).
- R. Le Gette Burris: 1 piece of satirical money, 2 campaign medalets, 1 memorial medalet (1977.0254); 52 US commemorative medals and US store cards (1977.0418).
- Postal Administration of Burundi, Philatelic Agency: 57 mint postage stamps of Burundi (323590).
- Frank A. Butterfield: 1 19th-century brace (1977.0059).
- California Conservationists for Jimmy Carter (through Robert Caughlan): 1 campaign T-shirt and 2 campaign buttons, supporting Jimmy Carter for President (323637).
- Camden County Historical Society (through Mrs. Margaret Weatherly):

- 1 Confederate flag captured from the picket boat *Le Compte* during the Civil War (321653).
- Government of Canada. Operational Services (through G. M. Sinclair): 10 postal cards of Canada with first day cancellations, issue of 1974 (1977.0057).
- Leopoldo Cancio: 2 bronze medals commemorating the coronation of King Juan Carlos I (1977.0442).
- Clifford A. Carpenter: audio tape of the history of Quaker Hill narrated by Lowell Thomas (1977.0229).
- Mrs. Miriam H. Carson in memory of David Carson IV and Miriam Elizabeth Carson Weymouth: 1 pair of lingerie clips, 1830–1849 (319963).
- David, Leigh and Woodbury Carter: 24 weapons (322669).
- Dennis L. Carter: 1 summer National Park Service ranger hat with hat band (1977.0326).
- Frederick Casoni: 1 T-shirt worn in Plains, Georgia, November 2, 1976, 1 newspaper *See How They Ran* from Republican Convention and 1 press pass identification (Carter-Mondale Campaign) (1977.0053).
- Robert M. Caver: one piccolo clarinet (323574).
- CBS News Information Services (through Marcia Stein): 2 Democratic National Convention news coverage broadsides and 4 photographs of CBS newsmen (1977.0042).
- Rudy and Gary Cervantes: 1 necktie, "Ford in 76" (323537).
- Dr. David Challinor: 1 mathematical exercise book (322685).
- Charles Products, Inc. (through Mr. and Mrs. Charles Feingersh): 2 bookkeeping machines (304212).
- Constance M. Charnley (through Mrs. Patricia W. Brown): lantern which hung in a New York residence to celebrate the truce at the end of the Civil War (322632).
- Daniel K. E. Ching: 3 circular horseshoes (1977.0644).
- F. A. Christensen: earthenware saucer dish manufactured by Pope-Gosser, Ohio (1977.0007).
- Circle Gallery, Ltd. (through Ralph M. Rehbock): 1 collotype of Norman Rockwell's painting *The Problem We All Live With* (323504).
- Mrs. Elvira Clain-Stefanelli: pair of dies for Aureus with portrait of Emperor Lucius Verus and related items (1977.0384); pair of dies for Aureus with portrait of Herennia Etruscilla, wife of Trajan Decius (A.D. 249-251), and related items (1977.0385); pair of dies for Aureus with portrait of Herennia Etruscilla, wife of Trajan Decius and related items (1977.0386); pair of dies for Sestertius with portrait of Emperor Vitellius and related items (1977.0387).
- Vladimir Clain-Stefanelli: pair of dies for Aureus with portrait of Geta and Caracalla and related items (1977.0382); pair of dies patterned after medallion portraying Emperor Marcus Aurelius and Commodus and related items (1977.0383); pair of dies for Aureus of the Roman Emperor Commodus and related material (1977.0430); pair of dies for Aureus portraying Carinus and related items (1977.0431); pair of dies for Aureus portraying the Usurper Laelianus and related material (1977.0432).
- Charles L. Clapp: 1 Massachusetts delegation badge to the Republican National Convention and 1 ribbon "Ford/Richardson" (1977.0591).
- Clark Brothers Bolt Co., Inc. (through Wesley B. Scott): shipping label, 1876 Centennial (316495).
- Nanette Clark and Marianne O'Toole: 1 Liberty Bell freedom watch (1977.0529).
- Robert S. Clark: 164 U.S. Navy Aviation Cadet, Midshipmen Aviator and Enlisted uniforms and uniform items, 1934-61 (1977.0245).

- Rosamond Clark: a baby comb 1880-1882, girl's hair ornament 1895-1900, and a ribbon 1890-1895 (320761).
- Mrs. Jessie B. Cleveland: 1 doll house resembling the White House, 1893-1897 (1977.0140).
- Jeffrey M. Clyman: 1 US Navy regulation inflatable life jacket, WWII (1977.0195).
- Barbara J. Coffee: 2 posters used in the 1974 D.C. primary election for Walter Washington and Anton Wood (1977.0594).
- Mrs. Bertrand W. Cohn: 1 woman's coat, 1 woman's designer dress, and the box for the dress (322625).
- Mrs. Rosalee Cohn: 1 Sevres cup and saucer c. 1754, 1 Copenhagen plate from Flora Danica service, and 1 Worcester saucer c. 1765-1775 (1977.0016).
- Coin Clubs of Guam: 4 commemorative medals, presentation set no. 5, issued by the Coin Clubs of Guam, 1972 (1977.0443).
- P. H. Colgan: 1 1973 policy on schooner *Fly*, and 2 photos of Old Albany Insurance Co. office (1977.0625).
- Elda Ilene Collins: 1 pink glass cane and 2 clear glass canes (1977.0590).
- Herbert R. Collins: 50 items including newspapers, magazines, bumper stickers and other political memorabilia (1977.0085); 2 posters entitled "Truckers Ask Why Does Nixon Play in Oil Shortages?" and "Truckers Ask Why Capped Domestic Oil Wells?" (1977.0494).
- Republic of Colombia, Asesora Tecnica Filatelica, Jefe de Relaciones Publicas, Administracion Postal Nacional (through Beatriz Pantoja de Gil): 2 souvenir sheets, 17 postage stamps, and 46 first day covers from Colombia (322766).
- The Colonial Williamsburg Foundation (through Carlisle H. Humelsine): 523 textiles and textile-related objects (321804).
- Ann F. Comm, Mrs. H. Wilson Ames, Charles B. Bridge, Col. John E. Bridge, Paul N. Bridge, William H. Bridge, Charles R. Comm, and J. Tyler Redd (through Ann F. Comm): 1 elephant tusk scrimshawed with African scenes by an American sailor and presented to Paymaster Horatio Bridge, USN in the 1850s (321616).
- Commercial Union Assurance Cos. (through Henry S. Stone and Carl R. Mitchell): 1 Oriental rug and 1 coat rack (1977.0634).
- Computer Medical Science Corp (through Christopher Andries): 4 models of electronic stethoscopes (322621).
- Donald B. Coney: peanut bag, phonograph, piece of cloth, wooden disc, and miscellaneous political buttons (1977.0487).
- Mr. and Mrs. Howard Conklin, Jr.: Watson's van Heurck Model Microscope with accessories and wooden case (319051).
- Government of Cook Islands, Ministry of Posts, Philatelic Bureau: 41 mint postage stamps, 17 mint souvenir sheets, and 20 first day covers all from the Cook Islands (323582).
- Richard W. Cook: 2 pamphlets entitled *Members of the Interparliamentary Party on its Tour of the United States as Guests of the Nation* and *Tour of the Interparliamentary Union (1904)/General Programme of the Tour* (1977.0306).
- Mildred E. Cooke and Arthur Broadus: 1 pair of glass candlesticks in crucifix form (1977.0360).
- Bernice Abbott Cope: 2 chemises, 2 brassieres, 2 handkerchiefs, 1 pair of stockings, 1 pair of shoes, 1 pair of garters, 1 wedding dress, 1 slip, 1 nightgown, 1 robe, 1 sash, 1 hair ornament, and 1 hat (318018).
- Mrs. Frances C. Corcoran: 1 china head doll owned by Esther Cleveland (1977.0134).
- Jacques H. Cornet: 2 pairs of woman's sandals, 1 pair of man's shoes, and a woman's headpiece (322728).
- Robert L. Cox: razor, made by Alex Fraser & Co. (316496).

- Mrs. Esther L. Crampton: 1 trigonometric calculating instrument designed by Frank A. and Theodore H. M. Crampton, and other items associated with Frank A. Crampton's designs (317954).
- Francis Richard Crawford: 2 reproduction bowie knives with sheaths (320007).
- CTP Industries, Inc. (through Arnold L. Silberman): 4 shopping bags with political campaign messages (1977.0332).
- Carole Ann Cullum: 146 political buttons concerning anti-Vietnam War protests, impeachment of Nixon, various radical causes, Shirley Chisholm campaign buttons, economic protests, women's rights, gay activism, and black rights (1977.0674).
- Field Curry: 37" section of crude oil pipeline (1977.0693).
- Government of Cyprus (through His Excellency Ambassador Nicos G. Dimitriou): 9 mint souvenir sheets and 232 mint postage stamps of Cyprus (323553); six first day covers of Cyprus honoring America's Bicentennial (1977.0018).
- Mrs. Ruth M. Dale: 3 Jenny Lind related items, an ambrotype, a facsimile ticket from a concert, and a program of her music sung by Frieda Hempel in 1925 (322642).
- Dana Productions (through Albert Saporoff): 1 film, *Presidential Campaigns and the Influence of Music* (1977.0014).
- The Danbury Mint (through Robert P. Capria and Ward J. Strausser): 1 gold Presidential Inaugural medal and 1 10 kt. edition of the 1977 gold Presidential Inaugural medal, with certificate and display case (1977.0406).
- George A. David: 1 early 20th-century German veterans banner from Richterich (317961).
- Esther Buck Davis: girl's dress, 1870-1871 (316430).
- Reba Deal: 1 t-shirt with slogan "U. S. Female" and 1 bumper sticker with slogan "Think Professional/Hire Women" (1977.0663).
- Mrs. Linda Hicks Deftos and H. Munson Hicks, Jr.: 3 ambrotypes and 10 daguerreotypes (322617).
- Mrs. Elizabeth Degenhart: commemorative plate, 2 copies of "The Degenhart Glass Story", and newspaper clippings of the Degenhart Glass art day (322734).
- Marvin C. Demler: 22 watercolor paintings showing various official American flags (1795-1912) with bearers in service uniforms or contemporary civilian dress, painted by Edward C. Kuhn (321805).
- Kingdom of Denmark, Ministry of Public Works: 10 mint souvenir sheets of Denmark, 70 mint postage stamps of Faroe Island, and 265 mint postage stamps of Denmark (322752).
- Roy James and Lula M. Dennison: 9 illustrated envelopes of the United States for the period 1953 through 1968 (323554).
- Irwin Dermer: 6 color photo-lithographs with 6 original transparencies (323516).
- Ethel M. Dewey: 1 certification of duty, 1 notification of pension claim, and 1 envelope cover (1977.0482).
- Barbara Dickstein: 1 woman's dress, designer, 1970 (323607).
- Robert C. Diefenbach: 1 booklet, *A Guide to Your Television Appearance* (1977.0327).
- William Dixon Company (through William Vance): 1 silversmith's mallet and 4 silversmith's hammers (1977.0547).
- Professor W. L. Dominy: Marchant ACT10M Calculator (1977.0605).
- David Donaldson: free blown vase signed on side "David Donaldson 1973 MFA Show" (1977.0017).
- R. R. Donnelley & Sons Co. (through Frank Hoell, Jr.): 7 reproduction Revolutionary War Engravings, battles of Lexington and Concord, 1775 (316387).

Mrs. Gladys C. Dougherty: card file box (318953); woven ribbon calendar for 1944 (1977.0104); 1 German porcelain pitcher decorated with polychrome flowers (1977.0479); 1 pressed glass vase ornamented with floral motifs (1977.0154).

Bruce Douglas: Keuffel and Esser Log Log Duplex Vector Slide Rule (321673).

Doulton and Company, Inc. (through Robert J. Saving): 3 bone china military figures representing Revolutionary War soldiers (1977.0159).

Government of Dubai, General Post Office, Philatelic Section: 32 mint postage stamps of Dubai (322753).

Mrs. Evelyn R. Dumaine: 2 Centennial ticket passes (322702).

Virginia McK. and Commander A. W. Dunne Jr.: 5 photo albums depicting the Naval career of Commander A. W. Dunn, Jr. USN. (321640).

Robert R. Dwelly: 2 sets of 2-volume books on marine insurance and 9 books on marine insurance and shipping (1977.0611).

E.R.A. Central (through Carolyn Noonan Parmer and Sonia McCallum): 16 items relating to the ratification of the equal rights amendment in Illinois (1977.0316).

John I. H. Eales: 3 belt plates (322651).

Lester W. Ebbets (through Carol Gronquist): 1 Underwood revolving hand duplicator (1977.0581).

W. F. Eberth: 1 Remington Rand calculator with instruction manual (319872).

Mrs. Ellis E. Eckland: 1 canteen worker's uniform belonging to Miss Emily Yardley (1977.0137).

Mrs. Flossie N. Edler: glass container that held the pen used by President Wilson to sign to bill establishing the National Park Service (322778).

Mr. Duncan L. Edwards: Silver tea pot by Barent Ten Eyck, Albany, New York, c. 1732. (1977.0770).

Eisai Company, Ltd. (through Mr. Yuji Naito): 6 patent medicine posters (311681).

Parke F. Engle: 1 pair of WWI service shoes (323562).

Estwing Tools (through Norman Estwing and Bob Youngren): 1 plastic mallet, 1 electrician's hammer, 1 shingler's hammer, and 1 carpenter's framing hammer (1977.0548).

Ethyl Corporation (through A. E. Huffman): 1 Brush runabout auto, 1912, and 1 extra engine for same (323572).

Paul Evans: 3 porcelain vases (321809).

Ex-Cell-O Corporation, Viso Corporation (through Farno L. Green): 1 radioisotope camera for diagnostic x rays (1977.0464).

Richard H. Eyde: 6 mint postage stamps of the German Democratic Republic (322760).

Mrs. Dorothy C. Faulkner: earthenware (faience) box with screw cover, Spain, Alcora, ca. 1775 (323569).

Henry Faul: 17 items of glass having uranium content (320798).

Craig R. Feinberg: 1 first aid kit (313297).

Mrs. Dorothy Dysart Fellers: 1 Italian Beretta semiautomatic pistol, 1 U.S. submachine gun and 1 Filipino native-made breechloading, smoothbore gun (1977.0371).

John T. Fesperman: chamber organ by Eben. Goodrich, Boston (1977.0187).

Mrs. Edwin A. Finn: 1 woman's hat, 1949 (316504).

Fireman's Fund American Insurance Cos. (through Edward O. Scharetg): 1 chart of the Irish coast (1977.0609).

C. W. Fishbaugh: 3 National Recovery Act objects including a window display card, the Iowa seal, and a tag (1977.0034).

Irene J. Fisher: woman's suit, 1947, and woman's hat, 1939 (318991).

Nancy S. & William J. Flather III: Chinese export porcelain plate (1977.0044).

Norm Flayderman: 3 boxes of late 19th-century saddle nails (323600).

Drs. Anne B. and John R. Fletcher in memory of Mrs. Anne Bosshard:
 117 bookbinding tools (1977.0565).

The Honorable Hiram L. Fong: 1 Hawaiian muumuu and 1 aloha shirt
 (1977.0338).

Mrs. Elizabeth B. Ford: dress and accessories of Elizabeth B. Ford.
 Accessories include muslin pattern for the dress, a bra, a pair of white
 cotton gloves, and a string of cultured pearls. (321732).

Forrest Mountaineering Ltd. (through John Cooley and William E. Forrest):
 1 mountaineer's hammer (1977.0549).

John O. and Gretchen Fox: 4 pieces of ingrain carpeting, with large-scale
 stylized floral patterns in a variety of room sizes (1977.0127).

Albert E. Frank: 1 pair man's shoes, 1940, and 1 man's overcoat, 1947
 (322601)

Mrs. Dona J. Frank: 2 sunflower fans and 1 badge used at the Republican
 National Convention in Kansas (1977.0051).

Rudolph D. Franklin: 1 wood carving, 1 Astrology sidereal calculator,
 1 Astronomy sidereal plotter, chart and drawing forms, protractor, reading
 mask, partial written instructions, and calculator markers for plotting and
 reading (318929).

Mrs. Mary Louise Freeburger: glazed ceramic dish with kewpie decals
 (320693).

Freese Mortgage Company Inc. (through Milton R. McMormick):
 1 Underwood Sundstrand bookkeeping machine with stand (304121).

Mrs. Katherine Fries: 1 porcelain plate made by the Onondaga Pottery
 Company in Syracuse, New York (323598).

Charles H. Fritts: 1 "Free D.C." name tag and 1 bumper sticker (1977.0204).

John A. Frye Shoe Company, Inc. (through R. D. Weeks): 1 pair of
 woman's boots, 1975 (318926).

L. Thomas Frye: 1 absentee ballot, 1 metal "marker," 1 instruction sheet,
 and 1 pamphlet of bilingual ballot instructions for absentee voting in the
 state of California (1977.0036).

J. J. Fuller Manufacturing Company (through J. J. Fuller): 1 high striker
 mallet (1977.0550).

Florence Yarnall Fullerton: 1 child's Boston rocking chair (323496).

Alan Galer: 1 phonograph record of Margaret Woodrow Wilson singing The
 Star Spangled Banner (1977.0376).

Mrs. Eilleen G. Galer: woman's dress, shoes and hat, man's shirt, 2 shirt
 collars and collar stud (310014).

Cyrus Galletto: 1 WWII European theater of operations jacket (1977.0313).

Stephen L. Garber: wafer iron with eagle design (20815).

Arthur W. Gardner: 2 woman's fans, 1840-1860 and 1890-1910 (320766).

Gardner-Denver Company (through D. G. Homan and L. L. Leigh): 1 Gardner
 governor (1977.0354).

Garfinckel's (through William C. Detwiller): porcelain figure of a horse,
 "Spirit of Freedom," 1976, by Burgues. (322606).

Goldie Damewood Garman: 1 crocheted picture, white cotton, "The Spirit
 of St. Louis", made in 1928 by donor, filet work (323524).

Carl W. Gatter: 2 curtain tiebacks (318972).

Charles L. Gauthier: 1972 Republican National Convention license plate
 (1977.0407).

Mrs. Harriett P. Gay: English earthenware part service, "shell pattern,"
 38 pieces (1977.0404).

Mrs. Hector D. Gellerson (through John P. Gellerson): 1 US M-2 carbine
 conversion kit (320048).

General Sportcraft Company (through Lawrence J. Gazlay and Harvey Kane):
 1 croquet mallet (1977.0551).

- Mrs. Marlys C. Gibbons: toy train set, includes locomotive, tender, baggage car, flat bed car, caboose, turntable, bridge, 2 bridge ramps, track turnouts, 2 curved track sections, and a straight track section (322701).
- Mrs. Cora Ginsburg: 1 white linen damask napkin (1977.0476).
- Paul Linwood and Evelyn May Gittings: 1 portfolio of photographs and essays and 1 cassette tape (323617).
- Myron Glaser: model of the Scripps-Howard lighthouse (321679).
- Joseph A. Godlesky: 1 spokeshave, 2 routers, and 24 planes (322670).
- Craddock R. Goins: 8 used postage stamps of Hungary (1977.0108).
- Norris W. Goldsmith: 1 carpenter's level with plumb (1977.0126).
- E. J. "Gunny" Gonzales: 43 xeroxed, typed and handwritten materials regarding the voting rights and laws in Alabama (1977.0344).
- Barbara B. Goodman: 4 books of matches (323636).
- Green Duck Corporation (through Elliott Sklar): 9 Carter/Ford campaign objects including 4 buttons, 2 key chains, 2 lapel pins, and 1 pin (1977.0041).
- Dr. Mary Eloise Green: collection of 1,284 canning jars and food preservation devices (322793).
- Stanley J. Green: eight-keyed German flute by Ernest Challier (1977.0152).
- H. Edward and Ruth Greene: 1 early 20th-century barber pole (322655).
- Howard F. Greene: 1 glass globe with foot (1977.0335).
- Mrs. Mary B. Greer: 2 homemade posters used at the 1976 G.O.P. Convention in Kansas City, Missouri (323635).
- Genevieve Gremillion: air letter sheet of Great Britain with Christmas design (1977.0247).
- Peter S. Grinnell: man's wrap, overcoat, 1931 (316455).
- Mr. and Mrs. Robert N. Groh: 1 expo watch camera, 1 Adisco stereo viewer, 1 clergy shur-fire flash gun, 3 empty bottles flash powder, 1 empty bottle flash caps, and 1 14" auxiliary flash pan (322643).
- Anna Grum: 1 man's vest, 2 brooches, 2 pendants, 1 necklace, and 1 ring (313176).
- Erma G. Guerin: 1 doll, "Dinah" (323639).
- Mrs. Dorothy Van Ness Gufler: 1 porcelain cup and saucer, German, Meissen c. 1735 (1977.0158).
- M. Eugenie Guilmette: 161 personal effects of Thomas C. Dudley, U.S.N. (1977.0186).
- Dona Guimaraes: coverlet, red and white, 1876 Centennial (317831).
- Government of the Republic of Guinea, Agence Philatelique de la Republique de Guinee: 51 mint postage stamps of Guinea (322763).
- C. R. Gutermuth in memory of Bessie Horm Gutermuth: woman's wrap, mantle, 1875-1899 (322627).
- Hudson Hagglund: 7 trunnion sleeve pins from the continental gunboat *Philadelphia* 1776 (321664).
- William E. Hague: 87 pieces of presidential glass (322772).
- Catherine O. and Charles E. Hall: 1 oil tank and pump (1977.0645).
- Nathaniel A. and Bonnie Geneva Hallcom: 5 pairs of man's stockings, 2 man's coats, 1 man's suit, 1 pair of man's shoes, 1 pair of woman's shoes, 1 pair of earrings, and 3 sets of jewelry (318917).
- Katherine M. Halle: 2 pieces of fabric, 1930 (323594).
- Halston Originals (through Jerry Uchin and Murray Kagle): 2 woman's dresses, 1972, 1 woman's blouse, and 1 sweater, 1972-1974 (308161).
- Henry Hamelly: 10 1974 US first day covers, 23 1975 US first day covers, and 6 1976 US first day covers (322744).
- Dr. Gloria M. Hammack: Appalachian dulcimer (256310).
- Hammel, Riglander and Co., Inc. (through Seymour Dule and E. J. Renz): 1 silversmith's pear shaped mallet (1977.0552).

Mrs. Josephine Rowell Hanna: 1 suit, 1 tie, 2 hats, 2 pairs of stockings, 1 pair of shoes, 1 pair of gloves, 1 bag, 2 dresses, 1 pair of panties, 1 brassiere, 1 slip, and 1 nightgown (317914).

Mrs. Eleanor Allan Hanson, Elizabeth H. Allan, Mary Stewart Allan, and Richard H. Allan, Jr. in memory of James Allan: 1 tall clock made by E. Howard & Company, c. 1855-1859 (1977.0507).

George Harkness, III: 2 pieces of "Democratic Wild Cat Money" (1977.0203).

Charles C. Harris: 3 radio receivers, 1 loud speaker, and 1 power supply (1977.0521).

The Harris Corporation (through Brendan P. O'Donnell and Richard J. Cormon): the first Harris E1 Press, 1896 (1977.0298).

James A. Hart: 3 reproduction belt plates, 3 pairs of collar insignia, and 1 Philadelphia Quartermaster Depot box (314641).

The Hartford Insurance Group (through Russell L. Burnham): 1 print *Burning of the 'Austria'* (1977.0624).

Julia P. Harvey: pin, dated 1876 (318013).

Alexander Haskins: Teagle loudspeaker adapter (1977.0523).

John Hazard, M.D.: 1 western Maryland railroad station bench (1977.0643).

Edward L. Hedlund: 4 photographs of Fleet Admiral William F. Halsey, 1946 (319040).

Mrs. Orva Walker Heissenbuttel: 3 pressed glass cup plates, 1975 (323499).

Mrs. Hazel M. Henn: 6 items belonging to Cynthia Westover Alden including 1 book *Bushy*, coral jewelry in a lacquered box, a memorial card, a letter from John Alden, and xeroxes of article on Mrs. Alden (1977.0118).

Stephen M. Henry: 2 reproduction Civil War type belt plates (1977.0031).

Agnes M. Herbst: 1 woman's cape, 1 woman's muff, and 1 pair of woman's cuffs all from the period 1860-1890 (316501).

William E. Heritage: 2 Carter campaign buttons (1977.0280).

Bayard Brooks Herrick: man's overcoat, 1938 (317884).

Herman Herst, Jr.: 1 postman's official badge of the 19th century (322745).

H. Munson Hicks, Jr.: see Mrs. Linda Hicks Deftos.

Mrs. Jean M. Hill: see Mrs. Harriet F. Margolies.

Herbert Hinsenkamp: dairy house pump (1977.0236).

Edward P. Hock: 1 cacheted cover "Pony Express Rider" dated January 29, 1975, issued in honor of the annual celebration (323558).

Mrs. Doris G. Hoffman (through Sigmund Rothschild): 1 surveying aneroid barometer (1977.0058).

Donald Hoke: 1 packet of 6 hat pins (323494); 1 Star-Rite vibrator (1977.0666).

Mr. and Mrs. Julius U. Hoke (through Donald R. Hoke): 1 flushing-rim hopper, J. A. Vogel (1977.0537).

Hans Hollein: 1 log inspector's hammer (1977.0562).

The Hollerith Family: Keyboard punches, a counter, patents and other documentation pertaining to Herman Hollerith's inventions, and related materials preserved by his son, Herman Hollerith, Jr. (1977.0114); 2 electrotypes and 1 mechanical pencil associated with Herman Hollerith and preserved by his son, Herman Hollerith, Jr. (1977.0503).

George B. Holloway: 1 US National 13 star flag, later 1800s (320058).

Jon Holtzman: collection of 169 "ancient and medieval coins," struck off dies made by Carl Wilhelm Becker, A.D. 1772-1830 (1977.0413).

Paul Holtzman: collection of 452 Roman bronze and billon coins struck at Alexandria, Egypt (320708).

The Home Insurance Company (through John H. Washburn and Richard L. Doyle): 2 framed prints, *Exchange Place and Steamboat Wharf*, and 1 book, *Marine Insurance in Philadelphia* (1977.0623).

- Sharon Lee and Herbert J. Honecker, Jr.: white woven counterpane made of cotton (322677).
- H. Earl and Miriam U. Hoover: worldwide collection of philatelic items consisting of 180,867 specimens (1977.0692).
- Hopkinton "Happy Bicentennial America" Committee (through Nathan G. Kaye): 1 autographed reproduction of certificate presented to President Gerald R. Ford by the donor (323512).
- Barbara E. Horsky: 1 box containing thread, "WM Barbour & Sons, Lisburn, Ireland" (320694).
- Mrs. Marie R. Hosea: 1 woman's veil, 1 man's pocketbook, and 1 man's scarf (316513).
- Mrs. Pauline Calendine Howard: 1 pair of woman's shoes, c. 1940 (318985).
- Dr. Richard H. Howland: 1 invitation to the inauguration of Walter Washington (1977.0484); letter about the 1876 Centennial (317829).
- Gilbert D. Hurd: 6 high frequency electrodes including surface, rectal, vaginal, nasal, throat, and urethral, 1 surface comb electrode, 1 insulated handle, 1 heavy insulated cord and 1 portable high frequency violet ray generator (308931).
- Robert Aborn Hut: collection of 22 Rookwood Pottery markers (1977.0153).
- Illinois Braille and Sight Saving School (through Thomas Svob): 1 Hall braille writer (308162).
- Sarah S. Ingelfinger: 1 Al Smith campaign pencil (1977.0090).
- Institute for Studies in Equality (through Dr. Hazel Greenberg and Anita M. Miller): 23 objects including fact sheets, booklets, bulletins, and books regarding the equal rights amendment (1977.0601).
- Insurance Company of North America (through Francis A. Lewis): 3 books including *Practical Navigator 1833*, *Annesley's Marine Insurance 1808*, and *Morse's American Gazetteer 1797* and 1 print of the *Great Eastern 1860*, 1 insurance policy on the *Peggy or Diana 1793*, and 1 Captain's document on the *Province Galley 1711* (1977.0622).
- The International Silver Company (through Donald J. Harper): 4 pewter plates, "Winter," "Spring" "Summer," "Autumn" (322784).
- The International Sunshine Society (through Mrs. Hazel M. Henn): 1 bronze bust of Cynthia Alden and 1 issue of the *Sunshine Bulletin*, April, 1971 (322713).
- State of Israel, Ministry of Posts: 32 first day covers of the State of Israel issued during 1974-1975 and 1976. (322596).
- Harold Jackson: 1 private telegraph code, 1 *Handbook of Foreign Exchange* and a collection of European marine regulations and conditions (1977.0620).
- Mrs. Mabel M. Jackson: 1 pair of woman's wedding shoes, 1937 (318927).
- William L. Jackson: 12 calculators, c. 1945-1964 (319049).
- Mrs. Flora Gill Jacobs: pile carpet made by Smith and patented in 1912
- Carl H. Jaeschke: 1 Scott's Imperial Stamp Album, 1 Post Office registered (322700).
letter form, and 1 Department of Agriculture meat inspection stamp (322758).
- George D. Jagels: sash worn to the Republican National Convention by the donor as delegate from California (323584).
- Jane Tool and Machine Company (through Louis P. Kolenski): 5 parts from the Corliss engine (1977.0506).
- Alice A. Janzen and Norman Rankin: 43 piece wood carved sheep ranch and tent cover (318988).
- The Bank of Japan: 2 specimens of 1000-yen banknote of Japan, 1976 (1977.0440).
- Mrs. Alice V. Jeffcoat: 1 woman's purse, 1950-1959 and 1 pair of woman's gloves, 1950-1959 (323603).

Charles E. Johnson: 2 commemorative plates of Mrs. Cleveland and Mrs. McKinley (1977.0488).

The Estate of Crockett Johnson (through Ruth Johnson Leisk): 1 painting *Construction of a Heptagon* by Crockett Johnson (322732).

Nancy Marie Johnson: woman's dress, 1935 (321796).

Mrs. Elizabeth K. Jones: McKinley bandanna (322727).

Mrs. Ellen R. Jones: 1 miniature model of a lithographic press (319964).

Mr. and Mrs. Harvey Lewis Jones (through H. McCoy Jones): 122 miniature lamps (night lights), 1 carpet bag, and 1 stand for vapor lamp (320866).

Robert Jordan: Universal Bread Maker No. 8 by Landers, Frary & Clark (320692).

Edith B. Katz: 31 etched copper plates by Kerr Eby (1977.0566).

Edgar Kaufmann, Jr.: 1 armchair, patented by Thomas E. Warren 1849, and made by American Chair Co., Troy, N. Y., and 1 cabinet made by members of the Art Workers Guild, Providence, R. I. (318015).

Mrs. Pauline Vicksman Kay and Arnold Vickman: 1 gold invitation sent by the Ohio Society of California to President and Mrs. William McKinley in 1899 (1977.0379).

H. Irving Kazer: 1 child's coat, and Jewish prayer shawl (Talis) bag (315484).

Mr. and Mrs. Pete J. Keffalas and Sons: 1 Peerless pencil whittler (318952).

Arthur C. Keller: 1 phonograph tone arm and orthophonic sound box (322647).

Harrison Keller: 2 earthenware figure groups made by the Sebring Pottery Company, 1 of an Indian and squaw, the other of a pair of bears (1977.0270).

Peter M. Keltch: Reagan poster (323543).

Mrs. Arlene N. Kettle: 1 Wales adding machine with stand (1977.0380).

Khan Rahim Bux Khan: 46 used postage stamps of Pakistan (323588).

Abdul Malek Khattak: 1 first day cover honoring the protection of peacocks in Pakistan (323552).

Dr. C. J. Kidd: 1 therapeutic rocking table, 1 portable x-ray machine, 1 Bucky table, 1 therapeutic heating lamp, and 2 electro therapeutic quartz lamps (1977.0264).

Norman L. Kilpatrick: 1 quilt, pieced work and applique, "Patriotic," Connecticut, 18th century (168993).

James Kincaid: 1 T-shirt with legend "Jimmy Won '76" given to donor by Mrs. Lillian Carter on his visit to Plains, Georgia (1977.0593).

Blanche E. King: 9 silver items including a 6-piece tea set, 1 tea pot, 1 cream pitcher, and 1 sugar bowl (316497).

Melvin L. King: 19th-Century rosewood fife (1977.0599).

Sandra E. King: 1 pair of woman's shoes, 1880-1895 (323493).

Kirby Lithographic Company, Inc. (through W. E. Grant): 1 lithographic hand press, 1 lithographic stone, and 1 brayer (1977.0278).

Frank Klapthor: 2 chair seats and 1 kaleidoscope on stand (318954); 1 walnut photographic display frame for 20 cartes-de-visite size photographs (322721); 1 decorative watch case with watch (1977.0239); 1 piccolo and 1 flute (1977.0598).

Mrs. Constance C. Klarer: 1 compact, "Bundles for Britain" (1977.0040).

Robert R. Klein: ceramic tile decorated with portrait of Theodore Roosevelt (322782).

Robert L. Klinger: 1 bar of soap and 1 gas mask in metal cannister, German WWI (322636).

Donald E. Kloster: 1 German starter pistol (323567).

Eugene I. Knez: 1 first day cover of Bhutan issued February 5, 1973. (1977.0028).

- Marion R. Kochler: 13 American drug promotional devices—anatomical models including kidney, hand bones, foot bones, hand, foot, hip, 2 knees, shoulder, vertebrae, coccyx, head and plates showing kidney and heart changes, and 5 patent medicines made in West Germany 1976 including Bayer Aspirin and 4 toothpastes—Ultra Weiss, Pepsodent, Colgate, and Ganz-Nah (1977.0667).
- Roland A. and Saga L. Kollbeck: 11 pieces of WWII period clothing accessories, and 1 Thanksgiving menu (318920).
- Kris Kononen: 1 straw hat belonging to and worn by Representative Bella Abzug and 16 printed materials concerning Ms. Abzug's legislative achievements, her career, and her candidacy for the U. S. Senate seat from New York (1977.0208).
- Mr. and Mrs. Mitchell Kopec: 1 multilith lithographic offset printer, and 1 lithographic stone (1977.0580).
- Koppers Company Inc. Metal Products Division (through Donald Devries and Charles P. Ferner): 1 rolling sphere planimeter by Coradi and pamphlets describing related Coradi instruments (1977.0112).
- Boris Kossoy: 22 black and white photographs (322604).
- Marty Kraft: 1 bunting and 2 "Welcome Republican" signs designed by Mr. Kraft for the Republican Host Committee (323511).
- Miss Louise and Dr. Louis A. M. Krause: 1 Portland cutter c. 1900, and 1 four-passenger sleigh c. 1900 (1977.0646).
- The Reverend and Mrs. Carl F. Kroenlein: 1 man's two-piece suit, 1938 (317942).
- Leonard A. Kroll: 1 pump drill, 1 triangular steel scale, 1 micrometer, and 1 self-contained soldering iron (1977.0361).
- Mr. and Mrs. Dominick Labino: opalescent silver glass bottle signed "Labino 1968" and a "copper" glass vase signed "Labino 1967" (321794).
- Land Transportation Fund (through Don H. Berkebile): 1 handkerchief, 3 photographs, and 1 mortgage bond certificate, all relating to railroads (1977.0249), 1 handbill Atchison, Topeka & Santa Fe RR (1977.0257).
- Lapidary Jewelers, Inc. (through Neal Geoffrey): 1 pocket watch in hunting case (1977.0238).
- Mrs. Joseph P. Larkin: US Naval uniforms and related uniform accessories (40 items) (316385).
- Frances W. Larsen: 1 Carter-Mondale button (1977.0055).
- Mildred B. Larsen: four page, handwritten letter from John McMillian to his brother, Jesse McMillian, February 17, 1861 (321726).
- Leonard L. Lasko: 18 1976 political campaign buttons (1977.0527).
- Lilly Fallah Lawrence: see Stanley E. Weaver.
- Diana Laws: 1 "Feminist Graffiti" t-shirt (1977.0664).
- LTC Benjamin T. Layton: 68 French coins, piedforts, and essais (1977.0402).
- League of Women Voters Education Fund (through Ruth C. Clusen): 51 objects from the 1976 Presidential debates and forums (1977.0477).
- League of Women Voters of Grand Rapids (through Susan K. Timmons): 1 letter from Mrs. Ford regarding membership in the League of Women Voters (1977.0075).
- Learning Games Associates (through Daisy H. Wren): 45 items including mathematical and logical games and kits with associated documentation (317891).
- Lecourtenay Company (through President Cantlupe): Sheppard roller gin, early 20th century (321803).
- Mrs. Marion M. Leigh: set of 8 Chinese local communistic emergency postage stamps used as money circa 1945-1948 (1977.0446).
- Lenox, Inc. (through Robert J. Sullivan): 1 plate, American, 1976, from the "Woodland Wildlife" series (321793); 1 porcelain plate decorated with a

- male and female cardinal 1976 (1977.0061); reproduction of 1887 Beleek porcelain vase designed by Walter Scott Lenox 1976 (1977.0062); 1 Lenox porcelain plate from "Woodland Wildlife" series decorated with beavers (1977.0673).
- Jack L. and Eleanor R. Leon: 3 pieces of English yellow-glazed earthenware including cup, saucer and pitcher, and 1 English porcelain plate painted by William Billingsley (1977.0374); 123 pieces of English yellow-glazed earthenware (319927).
- Professor Samuel Lepkovsky (through Ruth B. Bendor): crystalline pyridoxine, crystals of vitamin b6 (322615).
- Mrs. Kathleen S. Levine: 1 woman's dress, 1882-1888 (1977.0321).
- Janet Lewis: telegraph register, relay, key and relay, and binding post (323535).
- Mrs. Margaret S. Lewis: piece of copperplate printed cotton (1977.0105).
- Mort R. Lewis: 6 Nixon-Agnew supermarket handouts (1977.0011).
- Mrs. Ruby C. Lewis: Spanish American War style US uniform including 1 shirt, 1 service hat, 1 pair of leggings, 1 pair of breeches (317848).
- Jay Leyda: 1 scrap book containing political cartoons from *Harper's Weekly*, c. 1870, by Thomas Nast and others (1977.0373).
- Mrs. Gunnar Lilja: two apple head dolls (George and Martha Washington), two doll apple heads and one doll apple hand (1977.0135).
- Mrs. Earl W. Lipscomb: lock of hair of Daniel Webster taken from his head when one year old (1977.0457).
- Dr. Harvey Littleton: glass sculpture "Double Form" designed and produced by donor (1977.0349).
- Lixie (through Bob Kalberer): 3 machinist's hammers (1977.0553).
- Lloyd's Register of Shipping (through C. M. Glover): 1 copy of *Lloyd's Register of Shipping*, 1870 (1977.0607).
- Audrey S. and O. Frank Loekle: 1 Hammond typewriter and 16 accessories (1977.0586).
- Mrs. Alice Longworth: 1 dress with matching jacket, ca. 1905 (1977.0164).
- Laverne M. Love: 1 package of napkins with the likeness of Susan B. Anthony in the center (1977.0015).
- Ruth I. Lowell: two pairs woman's shoes, three woman's hats (313400).
- Morris H. Ludington: a collection of 207 New York state cancellations on US postage stamps (322748).
- Ludlow Typograph Company (through John M. Calhoun): 1 Ludlow typograph machine, 1 set of 13 bar type matrices, 4 matrix sticks, 1 12-point mold, 1 bottom trim knife, 1 pantograph engraving machine and 3 depth gauges (319975).
- E. Alma Lynch: 1 pair of woman's shoes, 1938 (316389).
- Ulysses G. Lyon: 1 bumper sticker made like the US flag with legend: "Save Gas 50 MPH./U.S. Environmental Protection Agency" (1977.0526).
- Scott G. MacKenzie: 1 cardboard box with picture of the White House on each side with legend "America Welcomes J. C. Peanut to His New Home" (1977.0299).
- Nancy Sevier Madden: 18 designer dresses, 7 designer suits, 2 designer coats, 1 designer blouse, 1 designer skirt, and 2 hats (316474).
- Mahdeen Cover Service (through R. M. Needham): U.S. covers of Masonic nature: 2 of 1973, 11 of 1974, 13 of 1975, and 6 of 1976 (322751).
- Herman Mahler: 1 watch demagnetizer ca. 1896 (321801).
- Joseph H. Makler: 1 side chair, 1946 (1977.0132); 2 lamps by Isamu Noguchi (1977.0403).
- Pat Malcolm: 1 small ceramic pendant for necklace with male and female symbols (1977.0297).

- Harry L. Mangerich: 1 sheet of 25 20AF airmail postage stamps of Afganistan (323556).
- March, Milligan & Company: 6 lithographic cards showing views of the Centennial International Exhibition at Philadelphia and 1 lithographic menu from Ph. J. Lauber's Centennial Restaurant (321802).
- Noah Marchal: 2 French shotgun shell casings (323545).
- Mrs. Harriet F. Margolies and Mrs. Jean M. Hill: 3 items including a chromolithograph entitled "Rest on the Roadside," an album containing scenic post cards, and "Mentor Course" a card series of daily readings and illustrations on art and architecture (1977.0405).
- Marine Office/Appleton & Cox Corp. (through John A. Potts and James T. Kelley): 3 books including "Parson's Marine Insurance", "Gourlie's General Average", and "Lowndes' General Average" (1977.0621).
- Mrs. Ralph E. Marker: a pair of woman's carriage boots, 1875-1910 (316413).
- Mrs. Jane Martens: 1 pair of woman's shoes, 1951 (318925).
- Maryland Historical Society (through P. William Filby): 138 pieces of Hendler ice cream equipment (1977.0689).
- The University of Maryland (through Dr. Mark Doudna): 18 pieces of audiometric apparatus and related items including 3 audiometers, 1 kymograph support drum, 1 bristophon, 1 pilling-witting masker, 1 electromagnetic tuning fork, 1 L. J. Marcy fluid projector holder, 1 simplex spirometer, 1 weight electrolarynx, 1 pipe organ, 1 tonoscope (306749).
- Dr. James J. Matejka, Jr.: 29 brass cancelling devices from the Ottoman Empire period of Turkey (322743).
- Gordon H. Mattison: 1 philatelic-numismatic combination cover commemorating the 200th anniversary of the US (322754).
- Muriel L. and Herbert C. Mayer: 1 late 19th-century triangle (1977.0670).
- Mrs. Edith P. Mayo: phonograph record entitled, "We Shall Overcome" (1977.0005); 3 women's movement posters (1977.0496); phonograph record, "Elaine Brown" (1977.0511).
- Luke W. McCann, F.S.C.: RAF service coat, 1 RAF jacket, 1 flying Royal Canadian Air Force log book, and 1 short sleeve shirt, from WWII (319045).
- Ross McCollum: 1 violin made in the shop of Nicola Amati 1670, and 1 French violin bow circa 1780-90 (1977.0067).
- George J. McDonald: framed oil painting on canvas of whaling ship with whale (1977.0336); 2 books concerning the activities of Senator Joseph McCarthy, 1 pamphlet containing transcripts of radio broadcasts about Senator McCarthy by Fulton Lewis, Jr. and 1 personal letter signed by Senator McCarthy's widow (1977.0304).
- H. Woodward McDowell: 8 objects belonging to William Osborne McDowell including a silk American "Peace" flag, silk pennant "Peace Among Nations", "Peace" ribbon, a printed card, a handwritten card, a handwritten letter from W. O. McDowell to Mrs. Bidle and 2 photographs (1977.0288).
- Mrs. Lula J. McDowell: 1 hand fan with photographs and information about the black lawmakers in Congress (circa 1976) (1977.0009).
- Kathleen A. McGee: WWII uniforms worn by Clark Gable including 8 pairs of trousers, 4 neckties, 2 coats, and 1 cap (321728).
- Mrs. Helen McGoldrick: 1 woman's bust improver, 2 baby bottles with box, 1 baby bottle brush and nipple (1977.0087); 3 items pertaining to the Centennial and 1 magazine, untitled, written on the bottom the words: "Eight Years of La Guardia / Eight Years of Good Government" (323618).
- J. Stanley McIntosh: 1 Victor animatophone projector and speaker (1977.0142).
- Janet McKenna: 1 Taft cigar (323544).
- J. Russell McShane: 1 Bicentennial replica of the 1893 Columbian Liberty Bell (1977.0515).

- Medallic Art Company and East Coast Coin Company (through Greg Jones and William T. Louth): "The Official Medal Collection of the Thirteen Original States," serial no. 1, in gold. Struck and issued by the Medallic Art Company (1977.0438).
- Dr. Esther Chilstrom Meixner: 1 bound volume of the complete run of issues of the newspaper "New Century For Woman" published at the Woman's Pavilion of the Philadelphia Centennial Exhibition, 1876 (1977.0109).
- Dr. Jose I. Mesa: mint postage stamp of Mexico (1977.0258).
- Metromedia, Inc. (through Preston R. Padden): 1 videotape of voter registration message in Spanish broadcasted during 1972 to encourage voter registration in the Washington Latino community (1977.0206).
- Alice M. Miles: clothes line reel (316483).
- Miller's (through Howard Hillman): 1 polo mallet (1977.0587).
- Mrs. Frank C. Miller in memory of Mrs. Eugenia M. Sampson: Pewabic Pottery vase, early 20th century (322777).
- Herman Miller, Inc. (through Hugh DePree): stage furnishings (13 objects) from the 1976 Presidential debates (1977.0060).
- J. Jefferson Miller, II: 1 hat box, ca. 1897 (313866); Wedgwood Jasper ware plate commemorating flight of Apollo II, 1970 (321792).
- Joseph L. Miller: inked, carved cane with log cabin and grass, coon and cider barrel (321724).
- Kenneth Z. Miller: 1 man's tie, 1949 (317882).
- Ruth Miller: 1 basket (323497).
- Miller's (through Howard Hillman): polo mallet (1977.0587).
- William Miner: printing press, metal, miniature, includes a chase which is fitted with a wood block to adapt the press for printing with Starr type (322684).
- Missouri Equal Rights Amendment Coalition (through Barbara Harrison): 2 pamphlets, 1 bumper sticker and 1 card relating to the ratification of the equal rights amendment in Missouri (1977.0025).
- C. Bradford Mitchell: 1 glass deadlight from a whaleship and 1 cast iron and glass inkwell (1977.0633).
- Dr. Edward Mitchell: 1 US Naval officer's dress sword with 1 regulation belt and hanger (321666).
- Raymond McK. Mitchell: 1 black beaver hat (1977.0635).
- A. W. Molton in memory of Mrs. Carrie Molton: quilted counterpane, white cotton (1977.0106).
- Government of Monaco, Office des Emissions de Timbres-Posts (through H. Chiavassa): 6 mint souvenir sheets and 212 mint postage stamps of Monaco (322736).
- Mrs. Arthur Monat: 1 woman's two piece dress, 1934 and 1 pair of woman's gloves, 1934 (320042).
- Donald L. Moody: 1 US flag, 1776-1876 commemorative design (321618).
- John J. Morris: 1 16mm motion picture film entitled "The History of the Gyroscope" (321619).
- Mrs. William C. Morrow: 1 woman's purse, ca. 1912 (1977.0307).
- Mrs. Grace S. Mountain: 3 pieces of Army Nurse Corps original beige summer uniform, WWII including 1 hat, 1 jacket and 1 skirt (318007).
- V. Mueller (through Robert J. Simmons and D. L. Whyte): 7 surgical mallets and 4 surgical hammers (1977.0686).
- Dr. Walter Mueller: 1 "Zaehlrohr" counter, ca. 1928 (1977.0136).
- Rene Muller: specialized collection of 12,989 postage stamps of the Saar (322735).
- William Munch, Inc. (through M. A. Casellas, Jr.): 1 1879 and 1 1885 appointment document, Board of Underwriters of New York (1977.0614).

- Mrs. Lucy G. Murphy: 2 US Marine Corps uniform items including 1 olive drab overcoat and 1 winter cap worn by the donor's husband from 1922-24 (321667).
- Craig W. Murray: 1 red, white and blue flag motif parasol (322779).
- Mrs. John H. Murray: 1 embroidered sampler, made by Elisabeth Holland of Boston, dated 1737 (323477); 15 used postage stamps including 9 from Great Britain, 1 from The Netherlands and 5 from Denmark (1977.0151); 16 halftone reproductions of lithographs published by Currier and Ives (321795); 2 19th-century tobacco jars (321810); 11 fashion plates, 2 woman's suits, 2 pairs woman's shoes, 2 woman's hats, 1 woman's blouse, and 1 man's robe (322730); 1 "Times Herald" newspaper dated Nov. 6, 1940, 1 1936 newspaper portrait of F.D.R., and 1 "New York News" envelope with eagle motif (1977.0054); 1 damask napkin, 1 wrapping paddle, and 1 birch bark basket (1977.0253); 2 Pennsylvania fracturs 1781 and 1818, "Illumination," 2 cyphering books, and 1 pen and ink drawing (1977.0333).
- Mrs. George W. S. Musgrave: 1 carte-de-visite of George Wilmer Samson Musgrave by C. S. Mosher, Baltimore, 1873 (320826).
- Berry E. Mushlin: Desk novelty of a blue eagle with spread wings above which is an arch with red letters "NR A" (323538).
- Patricia McGreevy Musleh (through Patricia C. Scofield): 2 dental articulators, 1 Trubyte tooth shade guide, 1 20th-century shade guide, 1 dental mouth mirror, 1 amalgam spatula and 1 dental cotton holder (1977.0577).
- Mutual Marine Office (through John N. Blackman): 1 boat signal lantern (1977.0608).
- John E. Nagle: 1 ribbon, 1977 inauguration of James E. Carter (1977.0427).
- Michael C. Nahl: 1,613 US airmail covers (1977.0171).
- J. Craig Nannos: 1 camp color, 1 guidon, and 1 standard of the Philadelphia State Fencibles (320849).
- Mrs. Celia Nathan: girl's dress, 1932 costume for 1732 (322699).
- Laurence M. Nathan: 1 pair of men's shoes, 1972 (318938).
- Sylvia Nechis: 1 woman's evening dress (320827).
- Mortimer L. Neinken: 61 financial documents illustrating the history of banking in the United States (1977.0401); 1 Clement Biddle letter dated from Philadelphia April 11, 1810, regarding the Bank of the US (1977.0394); 1 silver medal portraying Lord Cecil Baltimore and his wife, Lady Anne Arundel ca. 1632 (1977.0410).
- Government of The Netherlands, Netherlands postal and telecommunications services (through H. de Jonge): 17 mint postage stamps of Netherlands (322764).
- Mrs. Edwin A. Neugass in memory of Edwin A. Neugass (through Edwin A. Neugass, III): 2 French revolvers and 1 English revolver (319043).
- Government of New Zealand, Post Office Philatelic Bureau (through A. J. Murray) mint stamps in the 1974 stamp pack, 2 mint souvenir sheets and 61 mint postage stamps all from New Zealand (322746).
- The New Zealand Insurance Co., Ltd. (through D. R. St. Jacques): 1 navigator's desk (1977.0617).
- Edward C. Newbegin: 1 sheepskin diploma the from US Naval Academy dated June 3, 1955 (321617).
- Beatrice Newhall: 1 woman's grooming accessory, curling stick (323605).
- A. D. and Dorothy K. Nicholson: silk handkerchief, 1893 (322773).
- Government of Niue (through L. Douglas): 26 mint postage stamps of Niue (322767).
- Wilhelmina E. and Thomas Norrell: 4 lithographs of locomotives "Philadelphia", "Arkansas", "Mercury", and "Amazon" (1977.0305).
- Garrison Norton: 1 man's hat, 1850-74 (313307).

Morris Norton: 1 mouthbow made by donor (1977.0490).

Robert M. Organ: first day cover of Switzerland, issued 1972 (1977.0276).

C. S. Osborne and Company (through Foster S. Osborne): 1 rubber mallet, 1 auto trimmer's hammer and 1 carpet layers hammer (1977.0554).

Dr. Cornelius and Sui-Ling Soo Osgood: collection of 195 American Stoneware specimens (319884).

Estate of Ella Ostrowsky (through Abraham Ostrow): 57 items by Abbo Ostrowsky including 41 etched copper plates, 13 etchings, 2 etched zinc plates and 1 drawing (1977.0567).

Marianne O'Toole: see Nanette Clark.

Lawrence M. Otter: 3 Jimmy Carter campaign buttons (323514).

Mabel Owen: 1 "Shoulder to shoulder" tote bag (1977.0293).

Pan American World Airways, Inc. (through Nuzhat Idrissi and Thomas Wendel): 1 agent set, 1 terminal interchange, and 18 pieces of documentation, all related to the Panamac (IBM 9080) Airlines Reservations System (321704).

Pankin International Ltd. (through Jerome Pankin): 1 pair of woman's shoes (321798).

The Pannier Corporation (through A. D. Schilling): 1 steel inspector's hammer (1977.0555).

The Pasquaney Trust (through John K. Gemmill): 31 personal items of Captain John Wall Wilson, noted Arctic explorer, 1837-1900, 1 meat slicer, patent Arcadia, Newark, N. Y., 1885-91 (323446); 1 book, "The Report on the Proceedings of the United States Expedition to Lady Franklin Bay, Grinnell Land", by Adolphus W. Greely (1977.0480).

Samuel W. Patterson (through Charles W. Symanski): 1 pocket watch with A. W. W. Co. movement (1977.0505).

Robert E. Peary, Jr.: 7 items including gold and silver medals and an oak tablet presented to the donor's father Admiral Robert E. Peary USN, in 1909 for his discovery of the North Pole (322635).

Dr. Sidney A. Peerless: 3 medals commemorating historical events relating to American history (1977.0390).

Jean A. Pendleberry: 1 book "One Special Summer" written, illustrated and signed by Jacqueline and Lee Bouvier (323490).

J. C. Penney Company, Inc. (through Charles A. Meister): woman's dress, 1972 (322598).

Government of Penrhyn, Penrhyn Post Office: 1 souvenir sheet and 6 mint postage stamps of Penrhyn Islands (322747).

Peoples Bicentennial Commission (through Noreen Banks): 1 sweatshirt, 4 banners, 4 books, and 4 posters produced by the donor and circulated for the Bicentennial (1977.0497).

Philip L. Perkins: 1 German Luger semi-automatic pistol (317935).

Perkins School for the Blind (through Kenneth A. Stuckey): 1 Hall Braille writer (319895).

Joseph Perotta (through Mrs. Anita Dwyer): 1 wood carving depicting the US in the Bicentennial year, made by the donor (320049).

Charles L. Perry: 22 US Marine Corps & Seabee shoulder sleeve insignia, WWII (315375).

Walter G. Perry: 1 book, "Law of Insurance" by Phillips, 1840 (1977.0619).

Maurice A. Peter: 1 pair white leggings, WWII (1977.0241).

Mendel L. Peterson: 220 specimens including 30 US Post Office waybills (1840), 165 US and foreign covers, 22 US Revenues on portraits, 1 Bermuda stamp used as revenue, and 48 patriotic labels with correspondence and Congressional reports (1977.0199); 1 aqua-lung (322633); 1 marine navigation instrument (azimuth mirror) with wooden case (1977.0170).

Mrs. Richard N. Peterson: 2 jackets and 2 hats from Sousa band uniforms (322667).

Estate of Bernard Peyton (through Emil Lemay): used and unused postage stamps of the US and various foreign nations (322739).

Picker Corp. of US (through Keith D. Nelms): 1 1940 Picker Corporation x-ray machine (323568).

Captain Roger Pineau: 21 commercial covers with meter stamps from various countries and 1 postal meter impression of Lebanon (322768).

Dr. E. Leonard Piven: 18 engravings, 36 chromolithographs and 1 lithograph (323560).

Plastics Institute of America (through J. Harry Dubois): a collection of 89 early Bakelite artifacts (1977.0368).

Mrs. Rita McNamara Pleet: 2 dresses, 2 hats, 1 blouse, and 1 suit (318984).

Frank Podsiad: barrel making patent specifications (1977.0065).

Philip H. Pollock, Jr.: 1 Lincoln political campaign lantern (1977.0094).

Dr. J. Lawrence Pool: 2 myeloscopes (1977.0248).

Mrs. Alice James Pope: engraved certificate issued by the Crosby Opera House Art Association, which entitles the bearer to one fine steel engraving upon its surrender (1977.0077); 1 brass mortar and pestle and 1 wooden mortar (1977.0225); group of 84 American currencies and related materials (1977.0417); 1 beaded reticule and 1 beadwork cap (1977.0517).

Alejandro Pou: 8 recent coins from Uruguay (1977.0389).

Mr. and Mrs. George Prague: 1 Ivory Stamp Club "Adventurer" stamp album and 15 assorted Ivory Stamp Club stamp packets (322742).

Max R. Prilik: 1 Fleming valve c. 1915 (1977.0570).

Providence Washington Insurance Co. (through Mr. C. S. Kempt): 1 antique stapler (1977.0610).

Martin F. Ptacek: 1 paper folding machine, A.B. Dick (335464).

Dr. Karver L. Puestow: 1 original Puestow esophageal dilator, mounted (323456).

Anthony P. and Robert J. Pusateri: 1 car, 1 helmet, 1 shirt, and 1 notebook, associated with the Soapbox Derby (318011).

Rainbow Division Veterans, 222nd Infantry Chapter (through Mr. James V. McNicol): 1 distinctive insignia of 222nd Infantry and 1 illustration of the coat of arms of 222nd Infantry (321773).

Mrs. R. A. Rainer: 1 woman's coat, ca. 1936 (317927).

Kenneth J. R. Ranger: 1 black mourning ribbon with Gen. Grant in gold (1977.0397).

Norman Rankin: see Alice A. Janzen.

Dr. Ned S. Razor: first fully operational intracardiac pacemaker ever implanted (322717).

Henry & Marion L. Rau: 22 pieces of Wedgwood Jasperware (1977.0209).

J. Tayler Redd: see Ann F. Comm.

Mrs. Marie Berne Reilly: stockings, woman's 1944 (316396).

George B. Reimer: 1 Philco radio/phonograph (1977.0522).

Mrs. Myrtle Berg Reiswig: 1 woman's swimsuit, 1931 (323604).

Ralph Remley: broadside, "To the Independent Freemen of Boston", written by William A. Madocks, Boston, June 19, 1818 (322620).

Republican National Committee (through Josephine L. Good): 1 scarf tunic (1977.0080).

Marlene Reynolds: 1 WWI gas mask, 1 overseas cap and 1 folding metal cup (323534).

Loiz W. Rhead-Huyck: 1 porcelain vase and 1 porcelain plaque (320054).

Honorable J. J. Rhodes, M. C.: 1 vest worn at the 1976 G.O.P. convention in Kansas City, Missouri (323583).

Robert B. Rice: 1 diesel engine fuel pump, 2 Bosch oil pumps, 2 Bosch nozzle

- tips, 2 plungers and barrels from Bosch fuel injectors, 4 Bosch fuel injector nozzles, 1 General Motors fuel injector, 1 portion of a diesel piston, 1 set of 14 diesel injection nozzles, and 1 lot of 5 injector assemblies (1977.0355).
- Oscar W. Richards: 1 Brunsviga midget calculator (1977.0143).
- Mrs. Beverly Bruce Richardson: 1 woman's suit (318967).
- Jeremy Rifkin: 53 assorted books, newspapers, posters, broadsides and a series of prints with accompanying written explanatory background produced by the Peoples Bicentennial Commission for use during the Bicentennial era (1977.0563).
- Bernard Ring: 2 first day covers used at the 19th convention of the American First Day Cover Society in Cincinnati during August 1974. (322741).
- S. Dillon Ripley: 9 specimens including a presentation folder for the Bird Sanctuary postage stamp and a first day cover of the Michelangelo stamp from India, 2 mint souvenir sheets and 5 mint postage stamps from Bhutan (1977.0172); 42 1977 inaugural objects (1977.0328).
- Mr. and Mrs Forest Roberts: Wymore Bicentennial cookbook (321734).
- Edwin K. Robinson: 1 steel curved needle (1977.0169).
- Jerry D. Roe: 1 postcard, 2 buttons, 1 tag, and 1 bumper sticker relating to the Republican/Ford Campaign in Michigan (323542); 2 broadsides and 4 admission tickets to hear President Ford at Ann Arbor, Michigan, September 15, 1976 (1977.0012); 2 tapes "Milliken for Ford" and "Campaign 76, Special Radio Group" and 1 broadside "Welcome President Ford" (1977.0592).
- Ruth C. Rose: 8 pairs of gloves, 1 pair of shoes, and 1 man's handkerchief (312886).
- Norman F. Rothermel: amber tinted gold frame, non-prescription, auto driver's sun glasses with metal carrying case (322785).
- David R. Rowan: snow shovel, wood (323550).
- Mrs. Daryl Rubenstein: 2 woman's designer dresses and 1 woman's designer three-piece suit (323620).
- Edward Rubin: a collection (68 objects) of boy and girl scouts memorabilia (1977.0331).
- R. J. Russell: 1 planimeter (302380).
- Marvin S. Sadik: section of 1888 Harrison-Morton bunting (1977.0538).
- Sailors' Union of the Pacific (through Morris Weisberger): 13 items including newspapers, photographs and pamphlets on Harry Lundeberg (322689).
- The Salem China Company (through Harrison Keller) 2 earthenware objects decorated by the Salem China Company including 1 teapot with cover and 1 Portuguese tile (1977.0269).
- Cecile M. Zinsmeister Savard: 1 pair of dumbbells, and 1 pair of Indian clubs, ca. 1915+ (323449).
- Dr. Charles Savarese: USN regulation survival fishing gear (16 items) kept aboard all life rafts, WWII (321665).
- Robert Saypol: 1 bar pin with word "Bicentennial" and an attached bell with likeness of George Washington and dates 1732-1932 (323515).
- John A. and Albion Scarlett: 1 Pittsburgh pillar-molded glass vase c. 1840-60 and 1 contemporary iridescent glass vase by Robert William Bartlett (1977.0146).
- Scarlett Speedwell (through Joanna Giallelis): woman's trousers, 1975 (319952).
- E. J. Scharbach: 1 sea bag, 1 picture of schooner "Vigilant", 1 picture of donor on "Vigilant", 1 Certification of Service, and 1 Master's Certificate of Service of Sick or Injured Seamen (323526).
- Dr. John T. Schlebecker: 1 quart milk bottle (1977.0228); 1 cane knife (1977.0284).

- Mrs. C. B. Schmeltzer: 3 pairs of spectacles (323455).
- Flip Schulke: 1 book: "Martin Luther King, Jr.: A Documentary . . . Montgomery to Memphis" (323577).
- Mrs. Esther Schwartz: 42 household objects of textiles and related items (1977.0101).
- SCM Corporation, Business Equipment Division (through Armand G. Guibert and Robert S. Oakes): 11 calculators and related documentation (318944).
- Senator Hugh Scott: 10 objects from Senator Scott's political career (1977.0263).
- Self-determination for D. C. (through Elena S. Hess): 1 button, 1 banner, and 1 3-cornered hat with badge (1977.0129)
- Zaven Seraidarian: 1 Bicentennial banner (323582).
- Theodore A. Serrill: 8 objects from the Republican National Convention (323513).
- Marc Sevastopoulo: 1 French tortoise shell box (322638).
- The Seven-Up Company (through S. Lee Larkin): 13 7-UP bottles including 12 liter bottles and 1 1947 7-ounce bottle (322794).
- Clifford W. Shafer: two CINPEX '74 souvenir cards (322756).
- Mr. and Mrs. Henry F. Shaffner, II: sheet music, "On With Carter" (1977.0202); 1 autographed copy of the Jimmy Carter song inaugural edition (1977.0301).
- Mrs. Walter Sharp: 1 beaten biscuit board (322640).
- Francis J. Shea: 1 dress blue blouse ca. 1917-22, and 1 olive-drab hat ca. 1924 (1977.0027).
- Mrs. Elaine Shebby: 1 WWII Japanese field telephone (323478).
- Sherwood Medical Industries, Inc. (through E. Windischman): collection of 77 disposable syringes and needles illustrating the history and development of the disposable needle (1977.0117).
- Mrs. Sadie F. Shoudy: invitation to a ball of the Lady Washington Engine Company #40, dated December 12, 1854 (1977.0315).
- Thomas Shulman: 2 bumper stickers with legends "Jimmy/Plains, Ga." and "Goober" (1977.0256).
- Ted F. Silvey: bathroom tub and basin fixtures (312422).
- Mrs. Helene Blackburn Simmons: 2 leather post cards sent via the US Mails about 1905 (1977.0198).
- Melva L. Simmons: 1 commercial cover of the Republique du Congo, 1 used postage stamp of the US, 24 mint postage stamps, and 258 used foreign stamps (322759).
- Eloise Cummings Simpson: 2 glass plug gauges, and 1 Cinophot Exposure Meter (321695).
- Doris E. Slothower: 23 textile objects (323475).
- Jo-an R. Smith: 1 "Gorget 1776-1976" necklace (1977.0483).
- Mrs. Mary Louise Smith: large wooden gavel, a badge and an official program of the Republican National Convention 1976 which the donor used as Chairman of the Republican National Committee (1977.0377).
- Robert M. Smith: 1 book, "Better Queens" by Jay Smith, 1949 (323551).
- Stanley H. Smith: 1 Viet Cong/North Vietnamese Army ammunition box, 1 medical alert tag, 1 Army Aviation shirt, 1 Army Aviation field cap, 1 pair of Army Aviation trousers, 1 Army Aviation Aviator metal badge, 2 Warrant Officer garrison caps, 1 fatigue shirt, 1 pair of fatigue trousers, 1 fatigue belt, 1 pair of fatigue socks, 1 pair of cushion sole socks, 1 pilot's penlight, 1 Chief Warrant Officer insignia (319044).
- Smithsonian Institution, office of Exhibits Abroad (through Mrs. Julie Link Haifley): 5 Herman Miller Curtain samples (1977.0097).
- Smithsonian Museum Shops (through Mrs. Josephine L. Fingeret): 3 souvenir

- bookmarks — 2 with portraits of George Washington, 1 with portrait of Gerald R. Ford (323519).
- Smithsonian Institution, Product Development Office (through Ann I. McClellan): 30 fabric samples (322707).
- Mrs. James Sneed (through Jimmy Sneed): 1 Planimeter with case (314531).
- Mrs. Helen Snyder: 1 woman's apron, after 1875, silk (1977.0215).
- William Sommerwerck: 1 Hewlett-Packard HP-35 Calculator with associated materials (1977.0113).
- South African Mint (through J. J. Groenewald): 1976 proof set of 8 South African coins commemorating retired Second State President of South Africa, J. J. Fouché (1977.0388).
- University of Southern California, School of Medicine (through Richard F. Baker and Dr. S. Mudd): 1 Electronmicroscope—RCA EMU I, ca. 1944 (323480).
- John P. Soward: 1 copy of Homan's "Cyclopedia of Commerce", 1853 (1977.0618).
- Gladys G. Sperry: Woman's dress, 1840-49 (321800).
- Benjamin, Harvey G., and Norman Stack: 17 medals commemorating mostly American personalities and events (1977.0392); 2 trial pieces of private five dollar gold coins. 1 by C. Bechtler and the other by Dubosq and Co. (1977.0396); 2 "three dollar patterns" of the 1860's (1977.0398); unique trial piece in copper for US half dollar dated 1794 (1977.0399); artist's model in plaster for President Eisenhower medal (1977.0400); collection of 7 gold ingots and tablets bearing Mexico City Mint stampings dated 1741, 1744 and 1746 respectively (1977.0419); obverse and reverse dies for the so-called Lincoln three-dollar gold piece dated 1864 (1977.0420); reverse die for the Honduras 5 Centavos, dated 1871. (1977.0421); 2 ancient coins from Asia Minor (1977.0423); ancient medallion struck in Asia Minor in the name of the Emperor Balbinus (1977.0428); 2 ancient medallions struck in Asia Minor, 1 in the name of the Emperor Maximinus and the other in the name of Pupienus (1977.0429); 15 medals and other related materials referring to General Lafayette (1977.0433); record book of signatures of E. W. Clark and Co., Bankers in Philadelphia, Pennsylvania, 321 Chestnut Street, used since 1852 (1977.0434); 173 financial documents concerning mostly interests of US firms in foreign countries (1977.0436).
- Norman Stack: group of 5 coins illustrating the use of numismatic objects in applied arts (1977.0449).
- Standard Telephone and Cables, Ltd. (through P. Burgess Sykes and Science Museum, London): 1 Lucas Grapnell, 3 cast-iron steps, cable samples, 1 gutta percha trough (322605).
- Stanley Tools, Division of Stanley Works (through Edward C. Benfield and Raymond Pezzi): 1 chopping maul, 1 prospector's pick and 12 assorted hammers (1977.0556).
- Frank Stanton: 2 chairs used by Candidates John F. Kennedy and Richard M. Nixon in the first debate in history between presidential nominees, September 26, 1960 (1977.0541).
- Staples and Charles (through Barbara Charles): 1 pamphlet entitled "Suffrage in the District of Columbia, speech of Honorable George W. Julian, of Indiana, delivered January 16, 1866" (1977.0002).
- Frederick Steadry: 18 objects regarding Anti-Vietnam, Vietnam Veterans Against the War Rally at the Capitol, 1974, Nixon Impeachment Rally on the Mall, April 27, 1974. Includes 4 books, 5 posters, 2 newsletters, 3 bumper stickers, 1 banner, 1 handbill, 1 sign and 1 cardboard box. (321807).
- W. M. Stehle: 1 1894 policy of T. and M. (1977.0613).

- Mr. and Mrs. Edward S. Stein in memory of Lena Stein: 1 Universal sorter and 1 Remington Rand bookkeeping machine (1977.0191).
- D. Stempel AG: 4 gravers, 2 pattern plates, 8 punches, 2 matrices and 1 straight edge (1977.0455).
- Mrs. Elizabeth A. Stevens: linen damask tablecloth with a floral pattern (323522).
- Mrs. John W. Stewart: 9 pieces of antique jewelry owned by Mrs. Jefferson Davis (1977.0237).
- Dr. T. Dale Stewart: 1 glazed ceramic plate, possibly made at New Milford, Connecticut (1977.0283).
- Paul H. Stone: campaign button, "Dewey in '48" (1977.0091).
- Robert G. Stone: 256 specimens including used post cards from the US and foreign countries, US and foreign commercial covers, used foreign stamps, foreign postage meter impressions, philatelic labels from ARPHILA 1975 and foreign newspaper wrappers (322765).
- Victor L. Stones: 1 set of drafting instruments used by Charles S. Stones for drawing house and stair plans in the St. Louis Area (1977.0279).
- John Stortz and Son, Inc. (through Theodore L. Stortz): 4 cooper's tools and 1 slater's hammer (1977.0557).
- Mrs. Mary Tyler Stover: see Emily T. Tyler.
- Robert Strain: 1 pair of WWII combat service boots (1977.0163).
- Kenneth J. Sullo: 1 examining chair, 1 portable electro-therapeutic unit, 1 cabinet for portable electro-therapeutic unit, 1 physician's OB/GYN bag, 1 office scale, and 1 office table (319896).
- Mrs. Sarah Hal Sutherland: 3 pieces of 18th century English porcelain including a dish—Longton Hall, a covered jug—Lowestoft, and a figure—Chelsea-Derby (1977.0160).
- W. J. Sutherland: sampler made and signed by Ann Hurst, 1889 (1977.0375).
- Government of Sweden, General Directorate of Posts (through Nils Horjel): 238 postal specimens of Sweden including 53 first day covers, 7 letter sheets, 7 aerograms, 6 postal cards, 20 unexploded booklets of stamps, and 145 mint postage stamps (322755).
- Joseph Sweder: 1 Polish eagle device (314530).
- Mrs. Frances Swim: 1 13-star reproduction flag (321727).
- James H. Swisher and Son, Inc. (through E. A. Middlebrooks, Jr.): 2 porcelain King Edward Cigar roadside signs and 1 wood packing cigar press box (322791).
- Dr. Hans Syz: 1 master ophthalmograph of the American Optical* Co. (early 1940's) (1977.0139); 19 pieces of 18th century Meissen porcelain (1977.0166).
- Talbot, Bird and Co. (through Gerald V. S. Pepperell): 1 brass and mahogany Clinometer (1977.0615).
- Thomas L. Tallentire: 1 1939 Yellow Coach bus (1977.0636).
- Marie de M. Taveau: knitted lace shawl (323518).
- Mrs. J. M. Taylor: "Frank Leslie's Illustrated Newspaper" dated March 14, 1885 (1977.0100).
- Dr. V. L. Telegdi: 1 spark wire chamber spectrometer (1977.0532).
- Roger P. Templin (through the First National Bank and Trust Company of Alton, Illinois): 1 large vase, translucent glass with overall yellowish tan enamel ground and 2 hexagonal candlesticks with overall panel cutting (1977.0116).
- Texas Instruments, Incorporated (through Dr. Norman G. Einspruch): 1 electronic calculator, 8 semiconductor slices, 10 integrated electronic

* James Smithson Society member.

- circuits, 1 microprocessor and 1 photograph of first hand held calculator (319050).
- Mrs. Jean B. Thompson and Mrs. Mildred N. Beckert: 1 bullet ladle used during the Revolutionary War (317999).
- Mrs. Edgar Thoren: 1 Home Diathermy (1977.0668).
- Tokelau Islands Administration (through J. A. Bain): 8 mint postage stamps of Tokelau Islands issued during 1975 (322749).
- Mrs. Jeannette H. Toomey: 2 game plates from the State service of Rutherford B. Hayes (323482).
- Tracy Petites (through Beau Baker): 1 woman's dress, 1975 (321797).
- Robert L. Trbovich: 6 Marienwerder postage stamps with counterfeit overprints of denominations including 5, 20, 50, 75, 80 pfennig and 1 mark (1977.0194).
- Delmo F. Trilli and Guido P. Trilli: see Mrs. Melba Trilli Beckner.
- The Trimble-Kenvin-Smith Families (through Mrs. Verna Rudd Kenvin and Mrs. Joan W. Smith): 1784-1841 manuscript items from the Silas Talbot collections, medical appointments and newspaper accounts of a naval court martial, plus 3 newspapers from 1827, 40, 41 (323619).
- Trinity College (through Robert Robert Pedemonti and A. E. Sapega): 1 Gas Engine, Otto, ca. 1900 (1977.0540).
- John M. and Gary Triplett: 3 5-lb. flour bags, 2 10-lb flour bags and 1 catalog (1977.0102).
- Kenneth N. Trobaugh: 21 Civil War storecards, state medals and identification tags (1977.0391).
- Charles G. W. and Hazel J. Trostel: Jacquard single woven coverlet half (323520).
- Bernice V. Truitt: US Navy Women Commissioned Officers uniforms (18 items) worn by Captain Beatrice M. Truitt, USN first woman Line Officer to be selected to the rank of Captain, circa 1968 (323445).
- C. Delores Tucker: 1 copy of an address by the donor at the Women's Rights Centennial Commemoration at Independence Hall, July 4, 1976 (1977.0500).
- Turner & Cook, Inc. through Dorothea Bohman): 1 rawhide mallet (1977.0558).
- Emily T. Tyler, James A. Tyler, Jr. and Mrs. Mary Tyler Stover: 1 Harrison campaign flag banner, 1 lady's leather boot, 1 Confederate canteen and 3 fans (1977.0212).
- Willna Uebrick-Pacheli: 21 items including banners, clothing, literature bags, buttons and literature from the National Organization for Women's ERA vigil at the White House from July 4 through August 28, 1976 (1977.0501).
- Union Carbide Corporation, Oak Ridge National Laboratory and US Atomic Energy Commission, Oak Ridge Operations (through Peter Mazur and Kenneth M. Haythorn): 3 18-day mouse fetuses (312591).
- United Detector Technology, Inc. (through: J. B. Taylor): Model 21A power meter (319946).
- United Nations. United Nations Postal Administration: 10 mint sheets of United Nations postage stamps (323591).
- US Department of Commerce, *Bureau of the Census* (Through Daniel L. Levin and Frances A. Oleksak): 1 Univac computer tape (1977.0095); *National Bureau of Standards* (Through Walter W. Weinstein): 1 Konig-Martens visual polarization spectrophotometer (1977.0181).
- US Department of Defense, *Department of the Air Force, Defense Property Disposal Office* (Through Mrs. Lynette Helphrey): Morey milling machine, control unit, power supply, and director (322792); *Air Force Museum*: 1 footed bowl—milk glass, 1 glass slipper—blue, 1 glass slipper—red and 2 Bohemian glass vases (1977.0589); *Air Force Services Office* (AFLC): 1 Air Force decoration, distinguished service medal (323528).

- US Department of Defense, *Department of the Army: Center of Military History*: 1 1975 edition Army recruiting poster "I Want You" (323509); *Director of Facilities Engineering*: 1 WWII cast iron stove (312394); *Institute of Heraldry, Cameron Station*: collection of 6 US Armed Forces Service lapel buttons (314596); 1 lapel pin, USN retired, 20 years (307440); 38 US Army distinctive insignia, shoulder sleeve insignia and badges, and 1 US Coast Guard miniature coxswain insignia, ca. 1970's (323561); *US Army Mobility Equipment Research and Development Command*: 1 camouflage coat and 1 pair of trousers (322619); *Defense Property Disposal Office* (Through Col. William F. Strobridge): 1¼-ton truck (jeep) (1977.0366); *Special Ordnance and Equipment Branch*: 16 items including military rations and related utensils (323527).
- US Department of Defense, *Department of Navy, Naval Medical Center, Naval Graduate Dental School* (Through Cmdr. Dorsey Moore): 9 facial prostheses including 1 oculo-facila, 1 small oculo-facial, 2 noses in Oriental and Caucasion pigmentations, 1 right ear in Negro pigmentation, 1 left ear in Caucasian pigmentation and 3 ocular prostheses in various pigmentations (306965); *Office of the Chief of Naval Operations*: 1 Republic of Vietnam service medal and ribbon c. 1960 and 1 Republic of Vietnam campaign medal c. 1960 (322634).
- US Department of Health, Education and Welfare, *National Institute of Mental Health, Laboratory of Brain Evolution and Behavior* (through Dr. Michael Murphy): classic Linc computer (1977.0162).
- US Department of the Interior, *National Park Service, Harpers Ferry Center* (through David H. Wallace): 1 Odell typewriter and 2 boxes of carbon paper, "Old Dutch Line" (1977.0579); 1 third order lighthouse lens and related mechanism (1977.0626); *Historic American Buildings Survey* (through Dr. John Poppeliers and Patrick Burkhardt): 2 historic American buildings survey field notebooks (1977.0573).
- US Department of Justice, *Drug Enforcement Administration*: US Crossman Pellet Pistol (1977.0219); Japanese Nambu semi automatic pistol (1977.0220).
- US Department of Transportation, *US Coast Guard*: 1 4th order lighthouse lens from Point Iroquois, Michigan Light Station, 1884 (320740); US machine gun and mount (1977.0365).
- US Department of the Treasury, *Internal Revenue Service, Bureau of ATF*: 1 US rifle, M-14 (1977.0168); 1 US Sturm, Ruger rifle, M77 (1977.0196); US valor semi-automatic pistol, Guardian (1977.0498); S & W rifle with sling, Bushnell lite-site, and carrying case (323566); Italian Liberty arms revolver (1977.0218); Sterling Arms .25 caliber semi-automatic pistol with clip (323451); Browning semi automatic shotgun (1977.0379); 2 US Model 03-A3 rifles and 2 US Smith & Wesson revolvers (315370); *Bureau of Customs*: 1 wrist watch, men's Baume & Mercier c. 1976-77 (1977.0508); *Bureau of Engraving and Printing*: 580 certified plate proof sheets of US postage stamps, essays, and booklet pane covers (322786).
- US Energy and Development Administration, *Oak Ridge Operations*: 42 cyclotron materials (1977.0359).
- US General Service Administration, *National Archives*: unopened package of Kodak Velox photographic paper (322602).
- US House of Representatives (through Hon. Carl Albert): 1 flag displayed behind the Speaker's chair from January 1961 through September 1976 (1977.0052).
- US Library of Congress, *Gifts and Exchange Division* (through Nathan R. Einhorn): 26 specimens of political memorabilia including badges, ribbons, banners, wallets, handkerchiefs, chips from G. Washington's coffin, a pill box, a manicure case, and a plaque (322674); 1 1973 Inaugural book,

- 1 1973 invitation to the Inaugural Ceremonies from the Congress, and 1 program for the 1973 Inaugural Ceremonies (1977.0032); 7 items of Chester A. Arthur memorabilia including a dried rose, a button of the Loyal Legion, a brown leather wallet, a calling card case, an engraving plate for calling card, a telegraph blank holder and a black ribbon of "Despatch" (1977.0491).
- US Postal Service (through Benjamin F. Bailar): 1 presentation folder portraying US accomplishments in space through postage stamps and 1 Apollo-Soyuz first day cover (322740).
- US Postal Service, *Administration Group* (through Gordon C. Morrison): 171 mint US specimens including postage stamps, coil stamps, booklet panes, postal stationery, and postal cards (1977.0277); 204 American commemorative panels of US postage stamps issued by The American Banknote Company and the US Postal Service (1977.0282); 156 US stamp panels with first day cancellations (1977.0291).
- United States Steel Corporation (through E. J. Sederberg): Wean engineering model (314522).
- Office of the Vice President of the United States (through Capt. John Matheny): 1 12-inch Vice Presidential seal plaque used by Vice President Nelson A. Rockefeller (1977.0655).
- Unknown: 3 protest posters (323448); 1 silk banner with portrait of John F. Kennedy and the following quote in Spanish: "My fellow citizens of the world: Ask not what America will do for you, but what together we can do for the freedom of man" (1977.0079).
- Mr. and Mrs. A. R. Van Doren, Jr.: 7 pieces of woman's clothing and accessories including 2 dresses, a blouse, a pantsuit, a swimsuit, a purse, and a pair of boots (322599).
- Mrs. Ruth S. Vettel: jigsaw puzzle (317828).
- The Virginia Gazette (through Edward P. Offley): 5 copies of "The Virginia Gazette" dating from October 1, 1976 through October 29, 1976 (1977.0056).
- Diane von Furstenberg, Ltd. (through Diane von Furstenberg): 1 woman's dress, 1975-6 (317893).
- Arthur R. von Hippel: X-ray photo and 1 photograph of Roentgen's shotgun (1977.0535).
- Marguerite and John Potter Wagman: Jacquard double woven coverlet (323465.)
- Dr. and Mrs. Laverne G. Wagner: 13 pieces of Steuben glass designed by Frederick Carder and 1 vase and 1 glass spoon of other manufacture (321808).
- John J. Wagram: hunting horn by Francois Perinet (1977.0604).
- John R. Walbridge: 1 glass inkwell with silver top (1977.0606).
- Dr. Joseph Waldman: cloisonne enamel on glass designed and executed by the donor in memory of his father (1977.0312).
- Robert B. Walker: 2 color photographs of President and Mrs. Lyndon B. Johnson, 1 photo includes their two daughters also, 1965 and 1966 (323580).
- Dorothy E. Wallace: 2 catalogues of the Chicago World's Columbian Exposition of 1893 and 1 admission ticket to the Exposition (1977.0049).
- Mrs. Susan N. Wallace: 1 pair of leggings, canvas, dismounted, model 1938 (322663).
- Barbara L. and Burdett S. Warden, Jr.: 1 pair of metal printing blocks (1977.0518).
- Mr. and Mrs. Robert D. Warrington: 1 Admiral's flag and 1 Navy Jack, both with poles, ca. 1899 (1977.0481).
- Clara C. Watkins: 1 broadside for George Wallace's Presidential primary campaign, 1 newspaper "The Wallace Stand" October 1975 and 1 political

- booklet "Wallace and Carter" by Arthur Cobb (1977.0207); 1,825 photographs and negatives of the Poor People's Campaign and Resurrection City, May-July 1968 (322705).
- Huber S. Watson, L. Sherman Watson and Mrs. Lloyd R. Watson (through Walter C. Rothenbuhler): 1 Barber pipette holder, 1 queen bee operating table, and 1 queen bee insemination syringe (1977.0182).
- Stanley E. Weaver in memory of Norman Norell: 1 dress, 1 coat, 2 dresses with jackets, and 1 dress with coat (316345).
- Stanley E. Weaver and Lilly Fallah Lawrence in memory of Norman Norell: 1 woman's dress, designer, fall 1968 and 1 woman's dress with jacket, designer, spring 1968 (320691).
- S. J. Wegenek: electric curling iron (296044).
- Richard C. Weidlich (through John L. Skinner): 3 breast meters, 1 made of wood and metal, 1 made of wood, and 1 made of plastic (1977.0302).
- Raymond H. and Roger G. Weill: unused pair of stamps of the US two-cent Harding issue of 1923 (323555).
- Rosa and Harris Weinstein: hat stretcher (319947).
- Frankie Welch: set of 6 Bicentennial series of Presidential scarves including Presidents Washington, Adams, Lincoln, Theodore Roosevelt, Lyndon Johnson and First Lady Betty Ford (1977.0013); 9 First Lady scarves and napkins designed by donor (1977.0662).
- Betty Russell Welfare: 1876 fan (1977.0076).
- Mrs. Edward Welles: 1 pair of woman's shoes, 1859 (320858).
- Mrs. Nancy B. Werdell: memorial quilt, applique and pieced work (1977.0125).
- Weyenberg Shoe Mfg. Company, Nunn-Bush Shoe Company (through Thomas W. Florsheim): 1 tower clock works (322714).
- John H. White, Jr.: 1 motor oil sign (1977.0640); 1 US cover commemorating the 150th anniversary of the Stevens Locomotive, 1 cover from Switzerland—railroad oriented, and 2 covers from Switzerland with special cancellation (1977.0240).
- Roger White and Marilyn Wittmer: serigraph, "Indiana", by Roger White. Printed by Marilyn Wittmer (323531).
- J. C. Whitney and Company (through Roy I. Warshawsky): 3 autobody worker's hammers (1977.0559).
- Elizabeth D. and Myron A. Wick, Jr. in memory of Mrs. Myron A. Wick: 26 18th and early 19th century ceramics, including 25 pieces of English porcelain and 1 French faience (1977.0211).
- Mrs. Helen Wicksten: Adlai Stevenson letter (1977.0092).
- Mrs. Vivian Willner: 1 Chapel Bulletin for Men of Jewish Faith, Camp Davis, N.C. Aug. 25, 1944 and 1 menu Thanksgiving Day Nov. 20, 1941, Battery A, 198th Coast Artillery, Ft. Ontario, N.Y. (316435).
- Colonel Roger Willock, USMC, (Ret): 31 British War medals (321646).
- Charles A. Wilson: 1 US Marine Corps winter field dress uniform, WWI including trousers, coat, hat and 3 collars (1977.0372).
- Cdr. and Mrs. Paul R. Wilson USNR (Ret): 1 WWI Yeomanette uniform cloak (321621).
- Rollin L. Wilson: 3 shirts, 3 pairs of trousers, 3 ties, 2 jackets, 2 belts, and 1 pair of garters (322624).
- Mrs. Ruth Stewart Wilson: jigsaw puzzle and the toy, "Crandall's John Gelpin" (318951).
- Mrs. Mary Mosher Winchell: 2 photographs of Susan B. Anthony, 1 autograph of abolition leader Wendell Phillips and 1 oral history tape recording (1977.0064).
- Francis Wittemore: glass paperweight, yellow and lavender pansy with buds on dark blue ground (1977.0677).

- Marilyn Wittmer: see Roger White.
- Jack D. Wofford: 1 model of towboat M/V "Jack D. Wofford" (1977.0638).
- Women's Rights Centennial Committee (through Martha Lavell): 12 objects used in the 1976 Philadelphia re-enactment of the women's protest at the 1876 Centennial. Includes seven posters, a banner, a commemorative booklet, xerox of sheet music, a ribbon with a button, and a flyer (322780).
- Wooding-Verona Tool Works (through R. F. Davis): 4 railroad tools, 1 stonecutter's bush hammer and 1 ship maul (1977.0560).
- Donald W. and Charlotte S. Wooster: cotton quilt top or counterpane (323485).
- Dr. B. H. Worsley: a collection of 77 pieces documenting the early history of computers (304345).
- Rudolph G. Wunderlich: 1 postal bag, c. 1869 (322737).
- Wymore Community Improvement Council (through Mr. and Mrs. Forest Roberts): Wymore Bicentennial cookbook entitled "An American Bicentennial Recipe Book 1776-1976 Happy Birthday America" (321734).
- Dr. Martin and Mrs. Ruth Wynard: 1 Sevres porcelain ecuelle with cover and stand, and 1 Meissen porcelain group of Turkish gallant and lady with hussar modelled by Joachim Kaendler (1977.0210).
- Virginia Yates: 1 silver spoon by J. Mathews (323533).
- Margaret Robert Yerger: 3 hats, 1 dress, 1 lounging outfit, and 1 snowsuit (318924).
- Honor Youngs: 1 1901 Chicago automobile license (badge) (1977.0637).
- William E. Young: man's neckwear, tie, 1946 (320040).
- Mrs. Aileen Zahn: one French faience plate (possibly Moustiers). Late 18th century or 19th century (321811).
- Charlotte and David E. Zeitlin: 1 Toby Jug, English c. 1775 (323565); pair of shield-shaped velvet lined frames, each mounted with fifteen 18th century Wedgwood black basalt medallions of the 30 kings of England (1977.0188).
- Mrs. Waitman B. Zinn: Centennial fan (322698).
- Carl R. Zuckerman: 2 "Johnny Horizon" cowboy hats (1977.0680).
- Anthony C. and Nancy R. Zufich: 1951 Webcor wire recorder with foot control (316412).

NATIONAL PORTRAIT GALLERY

Donors of Financial Support

The Danish Bicentennial Committee Josiah Wedgwood and Sons

Donors to the Collection

- Dr. William H. Armstrong: *E. L. Godkin*, by Hollinger, photograph; *Lawrence Godkin*, by unknown artist, photograph.
- Joel Barlow: *Joel Barlow*, by William Dunlap, watercolor/ivory; *Joel Barlow*, by L. C. Ruotte, stipple engraving; *Joel Barlow*, by John Vanderlyn, charcoal and pencil/paper.
- Mrs. Emily M. Beck: *Harrison Gray Otis*, by Chester Harding, oil/canvas.
- Barry Bingham, Sr.: *Zachary Taylor and His Cabinet*, by Francis D'Avignon, lithograph.
- The Morris and Gwendolyn Cafritz Foundation (matching grant): *John Singleton Copley*, self-portrait, oil/canvas.
- Coe-Kerr Gallery, Inc.: *Andy Warhol*,* by Jamie Wyeth, gouache/paper.
- Barnaby Conrad: *Truman Capote*,* by Barnaby Conrad, charcoal/paper.
- Mrs. Richard K. Doud: *United States Senate, A.D. 1850—Henry Clay*, by Robert Whitechurch, engraving.

- Mr. and Mrs. Charles Feinberg: *Walt Whitman*, by George C. Cox, photograph; *Walt Whitman*, by Edy Bros., photograph; *Walt Whitman*, by G. F. E. Pearsall, photograph; *Walt Whitman*, by G. F. E. Pearsall, photograph; *Walt Whitman*, by Matthew Brady, photograph; *Walt Whitman*, by F. Guetkunst, photograph.
- Firestone Tire and Rubber Company: *Harvey S. Firestone*, by James Earl Fraser, bronze.
- Joseph H. Hennage: *Benjamin Franklin*, after Houdon, plaster.
- Richard Kenin: *Lloyd L. P. Smith*, by Edmond Kapp, lithograph.
- Peter Krasnow: *Edward Weston*, by Peter Krasnow, oil/canvas.
- Katie Louchheim: *Samuel Clemens*, by A. J. Meyer, photograph; *Albert Einstein*, by Lotte Jacobi, photograph.
- A. Hyatt Mayor: *Collis P. Huntington*, by William Keith, oil/canvas.
- Mr. and Mrs. David A. Morse: *Abraham Lincoln*, by William Willard, oil/canvas.
- The Old Print Shop, Inc.: *Nathaniel Parker Willis*, by Mathew Brady, photograph.
- Quaker Oats Foundation: *Zachary Taylor and his nephew Col. William S. Bliss*, by unidentified artist, daguerreotype.
- Peretz Foundation: *Jimmy Carter*, by Jame Wyeth, pencil/paper.
- Mr. and Mrs. Hobart C. Ramsey: *Howard Chandler Christy*, by Edgardo Simone, plaster.
- Messrs. David, John D. 3rd, Laurence S. and Nelson A. Rockefeller: *John D. Rockefeller*, by Jo Davidson, bronze.
- Mrs. Harriet M. Ross: *Woodrow Wilson*, by Harriet Murphy, oil/linen.
- Mrs. Jay Besson Rudolphy: *Charles T. Yerkes*, by Jan van Beers, oil on panel.
- Marvin Sadik: *Henry Clay*, by Francis D'Avignon, lithograph.
- The artist's daughters: *Charles Hopkinson*, by four self-portraits, oil/canvas.
- Dr. and Mrs. Jacob Terner: *Thomas Hicks*, by unknown artist, photograph; *Edward M. Bannister*, by Hurd Studio, photograph; *Rembrandt Peale*, by Matthew Brady, photograph; *Daniel Huntington*, by unknown artist, photograph; *Winslow Homer* by unknown artist, photograph; and others.
- Henry H. Villard: *Henry Villard*, by F. J. Haynes, photograph; *Helen Frances Garrison Villard*, by unknown artist, photograph.
- Visiting Nurse Service of New York: *Lillian Wald*, by William Schevill, oil/cardboard.
- Anonymous: *Albert Sands Southworth*, attributed to John Whipple, photograph.
- *Portraits are not admitted to the permanent collection until the subject has been deceased ten years.
- The President of the United States is exempted from this ruling.

OFFICE OF AMERICAN AND FOLKLIFE STUDIES

Donors of Financial Support

FOLKLIFE UNIT

\$10,000 and above

Energy Research and Development Administration
Music Performance Trust Funds

MUSEUM PROGRAMS

CONSERVATION ANALYTICAL LABORATORY

Donor to the Laboratory

Mecklenberg, Marion F.: book, *Handbook of Industrial Textiles*, E. R. Kaswell.

OFFICE OF HORTICULTURE

Donors of Financial Support

Mr. Anthony LaBarba
Mrs. S. Dillon Ripley
Women's Committee of the Smithsonian Association

Donors to the Collections

Mr. Martin Bachner: 110 mature orchid plants.
Mrs. Richard H. Bryand: 1939 volume of the *Proceedings of the Bostonian Society on Boston Public Gardens*.
Mr. Dan Collin: 20 mature Paphiopedelium plants.
Mr. Paul E. Desautels: 27 mature orchid plants.
Mrs. George Griswold: 1 *Howeia forsteriana*.
Mr. and Mrs. L. Kuhn: 24 mature orchid plants.
Mr. Donald McTurnan: 4 cast iron Victorian garden benches.
Mrs. Augustus Riggs: 3 *Strelitzia reginae*.
Mr. S. Dillon Ripley: 1 *Nopalxochia ackermannii* "Fire Glory x."
Mr. Ruben Sauleda: 2 *Polystachia concreta* and 2 *Epidendrum hodgianum*.
Mr. Russell Studebaker: 20 rooted cuttings of *Chrysanthemum frutescens* alba and 12 rooted cuttings of *Begonia* cv. Orange-Rubra.
Mrs. Deborah Thompson: *Tanacetum vulgare*.
Mrs. Bessie Wright: 1 *Araucaria excelsa* and decorative pot.

SMITHSONIAN INSTITUTION LIBRARIES

Donors to the Collections

Albree, Norman G.: Collection of books on firearms given to National Museum of History and Technology.
Allen, William H.: *Voyage Aériens* by J. Glaisher, 1870.
American Society of Interior Designers: Library of 2,000 volumes.
Appleman, Dr. Daniel: *Mineralogy of Arizona*.
Banks, Harold: Several volumes on minerals.
Bazelon, Bruce: Diving and other medical manuals.
Bedini, Silvio: *Pop Wiener, Naive Painter*, 1974.
Beer, Alice B.: About 200 volumes mostly on trade routes and silk trade.
Berliner, Don: Issues of *Control Column*.
Bloom, Dr. and Mrs. Jordan S.: Rare children's book entitled *Rocket Book*, 1912.
Bonney, Mrs. Walter: Collection of about 100 books and journals.
Boorstin, Dr. Daniel J.: Collection of about 100 books and journals.
Buell, William. Two volumes on oceans.
Clain-Stefanelli, Dr. Vladimir and Elvira. *Medals commemorating Battles of the American Revolution*.
Clarke, Dr. J. F. Gates: Fifty monographs and 300 serial publications on entomology.

- Cook, Stephen: Collection of aeronautical books and journals.
- Crome, Ernest: History of Qantas Airways Ltd., and Australian air mail service.
- Denig, Fred: Twenty volumes of *Arizona Highways*.
- Desautels, Paul: *Mineral Kingdom* and several textbooks.
- Dunn, Mrs. Ethel: Collection of 23 volumes.
- Eklund, Dr. Jon: *Centennial American Chemical Society 1876-1976*.
- Elder, Robert: Journals on pottery and glass.
- Eyde, Dr. Richard. *Lancaster Diary 1776*. 1976.
- Felek, Bela: Two volumes on the Herend (Hungary) China Manufactory.
- Ferguson, Lavona: Knife collecting guides.
- Fiske, Mrs. Gardiner: *Description des Expériences de la Machine Aérostatique de MM. de Montgolfier* by Barthélemy Faujas de Saint-Fond, 1783, and 20 other scarce aeronautical first editions.
- Fong, Yun Wah: Four rare Chinese volumes.
- Fox, David: Twenty-five early aeronautical children's books.
- Fujioka, Tomoo: *Butterflies of Japan*.
- Furnas, Mrs. Clifford C.: *A Memorial Biographical Record of Clifford Book Furnas, 1900-1969*. 3 volumes.
- Gradle, Robert: *Bell Was High on Kites, Too*.
- Grant, Dr. Richard: *Abstracts of North American Geology, 1969-1970*.
- Hampl, Jiri: *Letectvi Kosmonautika*, numbers 15-23, 25.
- Harlow, James: Serials.
- Harwood, Alison: A. J. Downing's *Architecture of Country Houses, 1850*, and additional monographs.
- Henderson, Dr. Edward: Three museum guides.
- Hickey, Leo J.: Russian botanical books.
- Hindle, Dr. Brooke: *The Year that Became a Decade, 1975*.
- Holan, Robert: Five cartons of Sandoz dye cards.
- Holcombe, Col. Theodore G.: *First World Flight* by Lowell Thomas, 1925. Autographed copy.
- House and Garden Magazine*: Color Archive.
- Hull, Donald R.: Fifteen books on the history of science.
- Jackson, Roy: Twenty early aeronautical histories.
- Jacobs, Dr. George J.: Fourteen Russian space exploration books.
- Kane, Douglas V.: Two books on aeronautical poetry by Douglas Kane.
- Kaufmann, Robert: Several volumes on decorative arts.
- Ketcham, Howard: Eighty volumes on color.
- Kramer, Dr. J. P.: *General Catalogue of Hymenoptera*.
- Krauss, Jeffrey: *Communications on the Lindbergh Flight, May 20-21, 1927*. Remarks by Commissioner Abbott Washburn.
- Krombien, Dr. Karl: Several volumes on insects.
- Lake Erie Jr. Nature and Science Center: Old Smithsonian and BAE reports.
- Lanyon, Wesley: *Greenwalt's Hummingbirds*. 5 volumes.
- Larson, Dr. Bruce L.: *Lindbergh of Minnesota: a Political Biography*, by Bruce Larson, 1973, and two issues of *Minnesota History*.
- Lawyer, J. E.: *Wonder Book of Aircraft, 1927*.
- Lee, Stephen: *Recognition Journal*, February 1944-July 1945.
- Loening, Mrs. Sarah L.: Fifteen scarce aeronautical books and photograph albums of the Loening Aeronautical Engineering Corporation and the Keystone Aircraft Corporation.
- London, Dr. Howard S.: Seven sets of space rocketry and propulsion journals.
- Mack, Mr. and Mrs. James L.: *New York Times*, October 11, 1953.
- Mann, John: Several volumes.
- Marton, Dr. L.: *Advances in Electronics and Electron Physics*.
- Marwick, Charles S.: Several volumes of *Science and New Scientist*.

Maurice, Dr. Klaus: *Die Fanzoeseische Pendule des 18 Jahrhunderts*.
 McGinty, W. J.: *Vision, The Story of Boeing* by Harold Mansfield, 1956.
 Mead, Dr. Giles: *Discovery Reports*.
 Messineo, S. J.: Six early aeronautical books.
 Miller, J. Jefferson II: *Cookie Cutters and Molds*.
 Miller, Ronald: Fifteen books on Tom Swift and aeronautical books.
 Mitchel, Mrs. Marguerite: Six aeronautical books.
 Munsell, Alex: Color material documenting career of A. H. Munsell.
 Neff, William B.: *35th Biennial Exhibition of Contemporary American Painting, 1977*.
 New Hampshire Aeronautics Commission: Eight aeronautical histories including *New England Aviators, 1914-1938*. 2 volumes.
 Nielsen, Anne T.: Transactions of the International Engineering Congress. 5 volumes.
 Oka, Masos: *Fishes of Southern and Western Japan*.
 Percy, Arthur: Volumes on aircraft.
 Pettibone, Dr. Marian: Six volumes on natural history.
 Potoski, Larry: Eight issues of *PRY-FLY*.
 Randall, Bruce: Serials.
 Rice, T. E. P.: Historical volumes, maps and journals.
 Ripley, Dr. S. Dillon: *BioScience* journals, books, and *Rails of the World*.
 Royal Doulton Company: *Royal Crown Derby* and *Doulton Lambeth Wares*.
 Salussolia, Peter: Six aeronautical books.
 Savard, James: Collection of educational volumes.
 Schwipps, Werner: *Otto Lilienthals Flugversuche*.
 Science Services, Inc.: Thirteen space science books.
 Scoville, Dr. Elmer B.: *Royal Air Force, the Middle East, and Disarmament, 1919-1934, 1972, and Airmobility 1961-1971, 1973*.
 Shank, Russell: Volumes of *American Heritage* and additional books and journals.
 Sheldon, Bert: *Speaking of Space, 1962, and Incident at Exeter, 1966*.
 Smith, Jean C.: *Traces of the Brush*.
 Smith, Dr. Lyman: *Flora Illustrada Catarinense*. Eleven fascicles.
 Sohn, Dr. I. G.: Thirty-nine volumes of *A.A.P.G. Bulletin*.
 Stack Bros.: Volumes of Jewish history.
 Stevens College: Books on air transportation and aviation education.
 Subotowicz, Dr. Mieczyslaw: *Elements of Astronautics* by Prof. Subotowicz, 1974.
 Sutnar, Ladislav: Archival material concerning his career as a graphic designer.
 SWISSAIR: *Aircraft of the Swiss Air Force since 1914, 1975*.
 Terry, Mrs. Harry: 1950 *Flair Magazine*.
 Thayer, Richard. Twelve volumes of *Smithsonian Scientific series*.
 Thompson, Mrs. Edward: *Thompson Begonia Guide*. 3 volumes.
 Walker, Dr. E. H.: Botanical monographs and serials.
 Walton, Mrs. Nancy-Bird: *Virtue in Flying* by Joan Priest, 1975.
 Ward, Dr. Ronald: Several journals and monographs.
 Wenzel, Kurt: Volume on Shakespeare.
 Wetmore, Dr. Alexander: Fifty-seven volumes on botany and biography.
 Wheaton, Elmer: Rocket and guided missile memorabilia.
 Wilkerson, Mrs. H. L.: *A magyar nep muveszite*. 5 volumes.
 Wings Club: "Sight" lecture, 1976.
 Wirth, Willia: *Revista Brasileira de entomologia*. 15 volumes.
 Wright, Gil: Twenty cartons of scientific journals.

PUBLIC SERVICE

ANACOSTIA NEIGHBORHOOD MUSEUM

Donors of Financial Support

C & P Telephone Company
Dorothy S. Grant

George Wayne Upton, Jr.
Mrs. Mary Knowles Weisner

DIVISION OF PERFORMING ARTS

Donors of Financial Support

Mobil Oil Corporation: Made funds available for the Inaugural Concerts
Music Performers Trust Funds: Granted funds for the Spring Celebration. The Music Performers Trust Funds is a public service organization created under agreements with the American Federation of Musicians. The grant for these performances was obtained with the cooperation of Local No. 161-710 American Federation of Musicians.
National Endowment for the Arts: Granted funds to support the Jazz Connoisseur and the Jazz Heritage Concert Series and the Jazz Oral History Project.

OFFICE OF ELEMENTARY AND SECONDARY EDUCATION

Donor of Financial Support Mr. DeWitt Wallace, Intern '77 Program

OFFICE OF SMITHSONIAN SYMPOSIA AND SEMINARS

Donors of Financial Support

American Security and Trust Company	Institute for Psychiatry and Foreign Affairs
Bendix Corporation	Marriott Corporation
James R. Bird	Massey-Ferguson, Inc.
Bucyrus-Erie Company	McDonald's Corporation
Bunge Corporation	National Savings and Trust Company
Champion Spark Plug Company	Ralston Purina Trust Fund
Eaton Corporation	Riggs National Bank
Ellis L. Phillips Foundation	Rockefeller Brothers Fund
Exxon Corporation	Rockefeller Foundation
Fluor Corporation	Roots Foundation
Ford Motor Company Fund	Ruder and Finn
Harcourt Brace Jovanovich, Inc.	Sperry Rand Corporation
Hoffman-La Roche Foundation	G. Violet Sturgeon
I U International	Wenner-Gren Foundation
Ingersoll-Rand Company	Weyerhaeuser Company

OFFICE OF TELECOMMUNICATIONS

Donors of Financial Support

IBM: A grant to station WETA/Channel 26, Washington, D.C., for research and development toward the public television series "Smithsonian World."
Women's Committee: For the Free Film Theater.

NATIONAL GALLERY OF ART

DONORS OF WORKS OF ART

Keith Achepohl	Mrs. Houghton P. Metcalf
Elsie F. Alsberg	Dr. Dieter Erich Meyer
Anonymous Donor	Adolph Caspar Miller Fund
Ruth B. Benedict in memory of her parents, Sophie and Carl Boschwitz	Mr. and Mrs. Myron Miller
William and Ruth Benedict	Pepita Milmore Memorial Fund
Collection of John and Louise Booth in memory of their daughter Winkie	Robert Rauschenberg
Ailsa Mellon Bruce Fund	Michael S. Sachs
Miss Alice W. Clement in memory of her grandfather, James Sayre Higbie	Stephen Spector
William Nelson Cromwell Fund	William M. Speiller
Dr. and Mrs. Henry L. Feffer	Mr. and Mrs. William M. Speiller
Collection of Dr. and Mrs. George Benjamin Green	Mr. and Mrs. John Steiner
Dr. Margaret I. Handy	Mr. and Mrs. Burton Tremaine
Mrs. Enid A. Haupt	Mr. David Tunick
Dr. and Mrs. Ronald R. Lubritz	Dr. and Mrs. Maclyn E. Wade
John Russell Mason	June Wayne
Andrew W. Mellon Purchase Fund	Mr. and Mrs. Hans W. Weigert in memory of Lili B. Weigert
	Emile E. Wolf
	James Rosati in memory of William C. Seitz

APPENDIX 10. *Visitors to the Smithsonian Institution,
October 1, 1976, through December 31, 1977*

<i>Month</i>	<i>Smithsonian Institution Building</i>	<i>Arts & Industries Building</i>	<i>Natural History Building</i>	<i>Air & Space Museum</i>	<i>Freer Gallery of Art</i>	<i>History & Technology Building</i>
October, 1976	61,442	94,500	319,885	725,799	14,388	331,882
November	41,841	85,815	300,533	742,489	12,957	373,778
December	31,304	73,084	216,199	483,696	10,729	179,598
January, 1977	27,655	54,496	213,297	414,426	9,852	158,395
February	42,346	83,448	278,158	574,671	15,016	217,055
March	61,813	84,849	355,452	671,622	18,610	275,718
April	78,677	133,758	580,641	1,090,689	21,766	556,604
May	63,602	111,118	540,576	919,598	18,858	499,939
June	83,904	119,591	527,509	1,085,841	19,819	453,018
July	110,690	159,858	706,352	1,406,035	28,398	586,653
August	106,170	157,473	624,798	1,230,829	26,114	553,911
September	45,702	65,713	244,341	540,655	18,501	203,374
October	44,003	59,599	301,423	654,130	19,703	299,708
November	34,471	53,329	365,529	578,269	16,857	207,917
December	26,838	39,995	184,950	373,066	13,397	226,261
TOTALS	860,458	1,376,626	5,777,643	11,491,815	264,965	5,123,811

<i>Month</i>	<i>Fine Arts & Portrait Galleries</i>	<i>Renwick Gallery</i>	<i>Hirshhorn Museum</i>	<i>Anacostia Neighborhood Museum</i>	<i>Cooper- Hewitt Museum</i>	<i>Totals</i>
October, 1976	31,464	13,980	100,654	1,540	28,552	1,724,080
November	36,486	11,528	96,341	2,982	30,540	1,735,290
December	27,527	11,218	71,246	3,091	21,363	1,129,055
January, 1977	24,017	9,852	66,759	47	19,745	1,016,540
February	24,288	11,029	96,620	1,346	15,940	1,359,917
March	28,808	14,665	116,551	5,107	19,845	1,653,040
April	30,017	13,201	154,285	3,397	15,262	2,678,297
May	38,362	11,642	131,146	4,306	18,233	2,357,380
June	45,093	13,592	129,572	3,494	13,354	2,494,787
July	38,663	15,011	149,925	4,715	15,557	3,221,857
August	40,443	16,644	147,009	3,189	17,087	2,923,667
September	34,196	13,430	82,784	4,097	13,104	1,265,897
October	37,403	15,261	103,763	3,744	8,716	1,547,453
November	34,594	13,800	89,479	5,088	12,901	1,412,234
December	29,859	17,651	70,811	3,565	10,285	996,678
TOTALS	501,220	202,504	1,606,945	49,708	260,484	27,516,179

NOTE: Visitors to the National Zoological Park (not reflected in the above figures) totaled 2,199,436 from October 1, 1976, through December 31, 1977.

APPENDIX 11. *Staff of the Smithsonian Institution and
Its Subsidiaries, September 30, 1977*

SECRETARY'S OFFICE AND RELATED ACTIVITIES

THE SECRETARY	S. DILLON RIPLEY
Executive Assistant	Dorothy Rosenberg
Special Assistant	James M. Hobbins
Special Assistant to the Secretary	Richard H. Howland
Special Assistant to the Secretary	Margaret Hird
Assistant Secretary for Administration .	John F. Jameson
Assistant Secretary for History and Art .	Charles Blitzer
Assistant Secretary for Science	David Challinor
Assistant Secretary for Museum Programs	Paul N. Perrot
Assistant Secretary for Public Service ..	Julian T. Euell
Treasurer	T. Ames Wheeler
General Counsel	Peter G. Powers
Director of Support Activities	Richard L. Ault
Director of Membership and Development	James McK. Symington
Coordinator of Public Information	Lawrence E. Taylor
Curator, Smithsonian Institution Building	James M. Goode
Honorary Research Associates	Alexander Wetmore, Secretary Emeritus
	Paul H. Oehser

SCIENCE

Assistant Secretary	David Challinor
Executive Officer	Harold J. Michaelson
Program Manager	Ross B. Simons
Administrative Assistant	Marsha S. Cox
Administrative Assistant	Rita R. Jordan

CHESAPEAKE BAY CENTER FOR ENVIRONMENTAL STUDIES

Director	J. Kevin Sullivan
Associate Director for Scientific Programs	David L. Correll
Associate Director for Education Programs	John H. Falk
Administrative Officer	Donald L. Wilhelm
Facilities Manager	John Rynarzewski
<i>Scientific Staff</i>	
Upland Ecology:	Estuarine Ecology:
Edward Balinsky	Robert Cory
Daniel Higman	Maria Faust
Kenneth Golkin	Elaine Friebele
James F. Lynch	Nancy Goff
Dennis Whigham	Joseph Miklas
	Watershed Studies:
	Gary Chirlin
	Deborah Ford
	Margaret McKim
	R. William Schaffner
	Tung Lin Wu
	Land Use History
	Amy Hiatt

Education Staff

John Balling	Linda Chick
Vicki Anderson	Neil Fitzpatrick
G. Marjorie Beane	Sally Gucinski

FORT PIERCE BUREAU

Director	Vacant
Administrative Assistant	June J. Jones
<i>Scientific Staff</i>	
Carcinologist	Robert H. Gore
	John R. Montgomery
Embryologist/Life Histories	Mary E. Rice (on leave from Museum of Natural History)
Research Assistants	Karen J. Carle
	Julianne Piraino
	Mart T. Price
	Kim A. Wilson
Postdoctoral Fellow	Edward E. Ruppert

NATIONAL AIR AND SPACE MUSEUM

Director	Michael Collins
Deputy Director	Melvin B. Zisfein
Executive Officer	John Whitelaw
Curator of Art	James D. Dean
Administrative Officer	M. Antoinette Smith
Registrar	Robin A. Schroffel
Public Information Officer	Lynne C. Murphy
Special Events Assistant	Louise H. Hull
Building Manager	Joseph L. Davisson
<i>Department of Aeronautics</i>	
Assistant Director	Donald S. Lopez
Historian Emeritus	Paul E. Garber
Curators	Walter J. Boyne
	Louis S. Casey
	Robert B. Meyer, Jr.
Associate Curator	Robert C. Mikesch
Assistant Curators	Claudia M. Oakes
	Charles G. Sweeting
	Edmund T. Wooldridge, Jr.
<i>Department of Astronautics</i>	
Assistant Director	F. C. Durant III
Curator	Walter H. Flint
Associate Curators	Louis R. Purnell
	Tom D. Crouch
Research Historian	Frank H. Winter
<i>Department of Science and Technology</i>	
Assistant Director	Howard Wolko
Associate Curators	Paul A. Hanle
	Richard P. Hallion

Center for Earth and Planetary Studies

Research Director

Geologists

Research Assistant

Farouk El-Baz

Ted A. Maxwell

Robert W. Wolfe

Priscilla A. Strain

Delia A. Warner

Richard E. D'Alli

Ann W. Gifford

Tracey A. Tisdall

Presentations and Education Division

Chief

Planetarium Officer

Theater Manager

Education Officer

Education Specialist

Program Coordinator

Von Del Chamberlin

Charles G. Barbely

Ronald E. Wagaman

Lynn R. Bondurant, Jr.

Nancy L. Murphy

Harold W. Snider

Exhibits Division

Chief

Chief, Audiovisual Unit

Chief, Design Unit

Designers

Francis A. Baby

Hernan Otano

Robert Widder

John W. Brown

John R. Clendening

Lucius E. Lomax

Terezia M. Takacs

Peter P. DeAnna

Eugene M. Knight, Jr.

Edna W. Owens

Frank Nelms

Illustrator

Chief, Media Unit

Editor

Chief, Production Unit

Preservation, Restoration and Storage Division

Chief

Silver Hill Museum

Walter J. Boyne

Donald K. Merchant

Library Branch

Librarian

Reference Librarian

Catherine D. Scott

Dominick Pisano

NATIONAL MUSEUM OF MAN, CENTER FOR THE STUDY OF MAN

Director

Assistant Director

Program Coordinator

Porter M. Kier

James F. Mello

Sam Stanley

NATIONAL ANTHROPOLOGICAL FILM CENTER

Director

Research Film Studies Coordinator

Anthropological Films Specialist

Research Film Editor

Visual Data Specialist

Research Film Cataloguer

Research Assistant

Assistant Research Film Editor

Research Assistant

Assistant Research Filmmaker

Administrative Assistant

Secretary

E. Richard Sorenson

Gay C. Neuberger

Emilie de Brigard

R. T. Slade, Sr.

Barbara Y. Johnson

Vacant

M. Michael Maloney, Jr.

Vacant

Mathias Maradol

Steven C. Schecter

Leslie A. Curtin

Eileen R. Bathelmy

Research Associates, Collaborators, and Affiliated Scholars:

Research Associate	Asen Balikci, University of Montreal, Quebec
Research Associate	John K. Marshall, Documentary Educational Resources, Somerville, Massachusetts
Collaborating Scholar	Lain S. Bangdel, Royal Nepal Academy, Kathmandu, Nepal
Collaborating Scholar	William H. Crocker, National Museum of Natural History, Washington, D.C.
Collaborating Scholar	Bayazid Hatsak, Jeweharlal Nehru University, New Delhi, India
Collaborating Scholar	Johan Reinhard, University of Wisconsin, Madison, Wisconsin
Collaborating Scholar	Scott Williams, Bellevue Community College, Bellevue, Washington
Consultant	Margaret Mead, The American Museum of Natural History, New York City
Consultant	Sol Tax, University of Chicago, Chicago, Illinois
Consultant	Carroll Williams, Anthropology Film Center, Santa Fe, New Mexico

RESEARCH INSTITUTE FOR IMMIGRATION AND ETHNIC STUDIES

Director	Roy S. Bryce-Laporte
Administrative Assistant	Betty S. Dyson
Research Coordinator	Stephen R. Couch
Program Coordinator	Delores M. Mortimer
Clerk-Typist	Constance Trombley

NATIONAL MUSEUM OF NATURAL HISTORY

Director	Porter M. Kier
Assistant Director	James F. Mello
Writer-Editor	Thomas R. Harney
Special Assistant to Director	W. Donald Duckworth
Staff Assistant to Director	William P. Haynes
Staff Assistant to Director	Catherine Kerby
Staff Assistant to Director	C. Willard Hart
Chief of Exhibits	Eugene F. Behlen ¹
Coordinator, Office of Education	Joan C. Madden
Chief of ADP Program	T. Gary Gautier
Building Manager	Jerome A. Conlon
Administrative Officer	Charles Ossola ²
Anthropological Researcher	Samuel L. Stanley
Registrar	Margaret A. Santiago

ANTHROPOLOGY

Chairman	William W. Fitzhugh
Senior Ethnologists	John C. Ewers
	Saul H. Rosenberg

¹ Appointed May 22, 1977.

² Appointed April 24, 1977.

Archivist	Herman J. Viola
Collections Manager	George E. Phebus
Conservator	Bethune M. Gibson
Public Information Specialist	Ruth O. Selig

Latin American Anthropology

Curator	Clifford Evans
Associate Curators	William H. Crocker Robert M. Laughlin

Old World Anthropology

Curators	Gordon D. Gibson Gus W. Van Beek Eugene I. Knez William B. Trousdale
----------------	---

North American Anthropology

Curator	William C. Sturtevant
Associate Curators	William W. Fitzhugh Dennis M. Stanford

Linguistics

Associate Curator	R. H. Ives Goddard III
-------------------------	------------------------

Physical Anthropology

Curator	J. Lawrence Angel
Associate Curators	Donald J. Ortner Lucile E. St. Hoyme Douglas H. Ubelaker
Chemist	David W. Von Endt

Research Associates, Collaborators, and Affiliated Scientists:

James Adovasio (Archeology)	Ralph K. Lewis (Ethnotechnology)
John P. Albanese (Geology)	Betty J. Meggers (Archeology)
Larry D. Banks (Geology) ³	Ann M. Palkovich-Shaw (Physical Anthropology) ⁶
Alison S. Brooks (Archeology) ⁴	C. J. Putschar (Physical Anthropology)
Robert S. Corruccini (Physical Anthropology) ⁵	Owen S. Rye (Archeology)
T. Aidan Cockburn (Physical Anthropology)	Frances Shulter-Ellis (Physical Anthropology)
Henry B. Collins (Archeology)	T. Dale Stewart (Physical Anthropology)
M. F. Ericksen (Physical Anthropology)	Mildred Mott Wedel (Archeology & Ethnohistory)
Patricia Gindhart (Physical Anthropology)	Waldo R. Wedel (Archeology)
Afifa Hassan (Physical Anthropology)	Theodore A. Wertime (Archeology)
Richard T. Koritzer (Physical Anthropology)	John E. Yellen (Archeology)

BOTANY

Chairman	Dieter C. Wasshausen
Senior Botanists	Richard S. Cowan F. Raymond Fosberg Mason E. Hale, Jr.

³ Appointed May 2, 1977.

⁴ Appointed March 1, 1977.

⁵ Appointed June 1, 1976.

⁶ Appointed September 12, 1977.

Phanerogams

Curators	John J. Wurdack Dan H. Nicolson Dieter C. Wasshausen
Associate Curators	Joseph H. Kirkbride, Jr. Robert W. Read Marie-Hélène Sacht Stanwyn G. Shetler Beryl B. Simpson Laurence E. Skog

Ferns

Associate Curator	David B. Lellinger
-------------------------	--------------------

Grasses

Curator	Thomas R. Soderstrom
---------------	----------------------

Cryptogams

Curator	Harold E. Robinson
Associate Curator	James N. Norris

Palynology

Associate Curator	John W. Nowicke
-------------------------	-----------------

Plant Anatomy

Curators	Edward S. Ayensu Richard H. Eyde
----------------	-------------------------------------

Research Associates, Collaborators, and Affiliated Scientists:

Katina Bucher (Cryptogams)	Kittie F. Parker (Compositae)
Paul S. Conger (Diatoms)	Duncan M. Porter (Phanerogams)
José Cautrecasas (Flora of Tropical South America)	Clyde F. Reed (Phanerogams)
Arthur Lyon Dahl (Algae)	James L. Reveal (Phanerogams)
James A. Duke (Flora of Panama)	Velva E. Rudd (Leguminosae)
Marie L. Farr (Fungi)	Lyman B. Smith (Flora of Brazil)
Aaron Goldberg (Phanerogams)	Seymour H. Sohmer (Phanerogams) ⁷
Charles R. Gunn (Seeds)	Marie L. Solt (Melastomataceae)
William H. Hathaway (Flora of Central America)	Frans A. Stafleu (Phanerogams)
Paul L. Lentz (Fungi)	William L. Stern (Plant Anatomy)
Elbert L. Little, Jr. (Dendrology)	Edward E. Terrell (Phanerogams)
Alicia Lourteig (Neotropical Botany)	Francis A. Uecker (Fungi)
	Egbert H. Walker (East Asian Flora)

ENTOMOLOGY

Chairman	Don R. Davis
Collections Manager	Gary F. Hevel
Senior Entomologist	Karl V. Krombein

Neuropteroids and Diptera

Curator	Oliver S. Flint, Jr.
Associate Curator	Wayne N. Mathis

Lepidoptera

Curators	Don R. Davis W. Donald Duckworth William D. Field
Associate Curator	John M. Burns

⁷ Appointed September 1, 1977.

Coleoptera

Curator Terry L. Erwin
Associate Curator Paul J. Spangler

Hemiptera and Hymenoptera

Curators Richard C. Froeschner
Paul D. Hurd, Jr.

Myriapoda and Arachnida

Curator Ralph E. Crabill, Jr.

Research Associates, Collaborators, and Affiliated Scientists:

Charles P. Alexander (Diptera) W. L. Jellison (Siphonaptera,
Anoplura)
Doris H. Blake (Coleoptera) Harold F. Loomis (Myriapoda)
Franklin S. Blanton (Diptera) C. F. W. Muesebeck (Hymenoptera)
Frank L. Campbel (Insect Physiology) Kenelm Philip (Lepidoptera)⁹
Oscar L. Cartwright (Coleoptera) George W. Rawson (Lepidoptera)
J. F. Gates Clarke (Lepidoptera) Mary Livingston Ripley (General
Entomology)
Hilary Crusz (Insects of Ceylon) Robert Traub (Siphonaptera)
K. C. Emerson (Mallophaga) Hayo H. W. Velthuis (Hymenoptera)
John H. Fales (Lepidoptera)⁸ Ronald A. Ward (Medical Entomology)
John G. Franclemont (Lepidoptera) David Wooldridge (Coleoptera)
Harry Hoogstraal (Medical Entomology)

INVERTEBRATE ZOOLOGY

Chairman W. Duane Hope
Senior Zoologists Fenner A. Chace, Jr.
Horton H. Hobbs, Jr.

Crustacea

Curators J. Laurens Barnard
Thomas E. Bowman
Roger F. Cressey
Louis S. Kornicker
Raymond B. Manning

Echinoderms

Curators Frederick M. Bayer
David L. Pawson
Klaus Ruetzler

Mollusks

Curators Clyde F. E. Roper
Joseph Rosewater
Associate Curators Arthur H. Clarke¹⁰
Richard S. Houbrick¹¹

Worms

Curators Meredith L. Jones
Marian H. Pettibone
Mary E. Rice

⁸ Appointed June 1, 1977.

⁹ Appointed May 1, 1977.

¹⁰ Appointed January 10, 1977.

¹¹ Appointed March 13, 1977.

Research Associates, Collaborators, and Affiliated Scientists:

S. Stillman Berry (Mollusks)	Patsy McLaughlin (Crustacea)
J. Bruce Bredin (Biology)	Anthony J. Provenzano, Jr. (Crustacea)
Isabel C. Canet (Biology)	Harald A. Rehder (Mollusks) ¹²
John C. Harshbarger (Marine Invertebrates)	Frank R. Schwengal (Mollusks)
Lipke B. Holthuis (Crustacea)	I. G. Sohn (Crustacea)
Roman Kenk (Worms)	Gilbert L. Voss (Mollusks)
J. Ralph Lichtenfels (Worms)	Austin B. Williams (Crustacea)
	David K. Young (Mollusks)

MINERAL SCIENCES

Chairman William G. Melson

Division of Meteorites

Curators Roy S. Clarke, Jr.
Brian H. Mason
Kurt Fredriksson
Robert F. Fudali

Division of Mineralogy

Curator Paul E. Desautels
Associate Curator John S. White
Crystallographer Daniel E. Appleman

Division of Petrology and Volcanology

Curators Richard S. Fiske
Thomas E. Simkin

Physical Sciences Laboratory

Chemists Eugene Jarosewich
Joseph A. Nelen

Research Associates, Collaborators, and Affiliated Scientists:

Howard J. Axon (Meteorites)	Paul B. Moore (Petrology)
Vago F. Buchwald (Meteorites)	Rosser Reeves (Mineralogy)
William C. Buell IV (Volcanology)	Arthur Roe (Mineralogy)
Gary R. Byerly (Petrology)	John M. Sinton (Petrology)
John Filson (Petrology) ¹³	George Switzer (Mineralogy)
John J. Gurney (Petrology)	Geoffrey Thompson (Petrology)
Edward P. Henderson (Meteorites)	Othmar T. Tobisch (Petrology)
Peter A. Jezek (Petrology) ¹⁴	John J. Trelawney (Mineralogy)
Peter Leavens (Mineralogy)	Harry Winston (Mineralogy)

PALEOBIOLOGY

Chairman Martin A. Buzas¹⁵
Collections Manager Frederick J. Collier

Invertebrate Paleontology

Curators Richard M. Benson
Richard S. Boardman
Martin A. Buzas
Alan H. Cheetham
Richard Cifelli
Richard E. Grant

¹² Appointed February 1, 1977.

¹³ Appointed February 1, 1977.

¹⁴ Appointed June 1, 1977.

¹⁵ Appointed July 1, 1977.

Geologist	Erle G. Kauffman Porter M. Kier Thomas R. Waller Kenneth M. Towe
<i>Vertebrate Paleontology</i>	
Curators	Nicholas Hotton III Clayton E. Ray
Associate Curator	Robert J. Emry
<i>Paleobotany</i>	
Curators	Walter H. Adey Francis M. Hueber
Associate Curator	Leo J. Hickey
<i>Sedimentology</i>	
Curator	Jack W. Pierce
Geological Oceanographer	Daniel J. Stanley
Geologist	Ian G. Macintyre
<i>Research Associates, Collaborators, and Affiliated Scientists:</i>	
Patricia Adey	Venka V. Macintyre
Arthur J. Boucot	Andres Maldonado ¹⁷
Anthony G. Coates	Sergius H. Mamay
G. Arthur Cooper	James F. Mello
Raymond Douglass	Robert B. Neuman
J. Thomas Dutro	William A. Oliver, Jr.
Douglas Emlong	Axel A. Olsson
Robert M. Finks	Thomas F. Phelan
C. Lewis Gazin	John Pojeta, Jr.
Mackenzie Gordon, Jr.	Charles A. Repenning
David Govoni	Frederic R. Siegel
Richard Graus	Norman F. Sohl
Peter J. Harmatuk	Steven M. Stanley
Bruce N. Haugh ¹⁸	Robert S. Steneck ¹⁸
Joseph E. Hazel	Margaret Ruth Todd
Ralph W. Imlay	Frank C. Whitmore, Jr.
Jeremy B. C. Jackson	Druid Wilson ¹⁹
Gilbert Kelling	John W. Wilson
Harry S. Ladd	Wendell P. Woodring
N. Gary Lane	Ellis P. Yochelson
Kenneth E. Lohman	

VERTEBRATE ZOOLOGY

Chairman	Robert H. Gibbs, Jr.
<i>Fishes</i>	
Curators	Robert H. Gibbs, Jr. Ernest A. Lachner Victor G. Springer Stanley H. Weitzman
Associate Curator	William R. Taylor

¹⁶ Appointed May 1, 1977.

¹⁷ Appointed February 11, 1977.

¹⁸ Appointed April 1, 1977.

¹⁹ Appointed May 1, 1976.

<i>Reptiles and Amphibians</i>	
Curators	W. Ronald Heyer George R. Zug
<i>Birds</i>	
Curators	George E. Watson Richard L. Zusi
Associate Curators	Storrs Olson Paul Slud
<i>Mammals</i>	
Curators	Charles O. Handley, Jr. Henry W. Setzer Richard W. Thorington, Jr.
Associate Curator	James G. Mead
<i>Research Associates, Collaborators, and Affiliated Scientists:</i>	
John W. Aldrich (Birds)	Clyde J. Jones (Mammals)
Ronald Gail Altig (Reptiles, Amphibians)	Roxie C. Laybourne (Birds)
Richard C. Banks (Birds)	J. A. J. Meester (Mammals)
William Belton (Birds)	Edgardo Mondolfi (Mammals)
Michael A. Bogan (Mammals)	Russell E. Mumford (Mammals)
James E. Böhlke (Fishes)	John Paradiso (Mammals)
Ronald A. Brandon (Reptiles, Amphibians)	William F. Perrin (Mammals)
Robert L. Brownell (Mammals)	Dioscoro S. Rabor (Birds)
Howard W. Campbell (Reptiles, Amphibians)	S. Dillon Ripley (Birds)
Daniel M. Cohen (Fishes)	Rudolfo Ruibal (Reptiles, Amphibians)
Bruce B. Collette (Fishes)	William Schevill (Mammals)
Carl H. Ernst (Reptiles, Amphibians)	Leonard P. Schultz (Fishes)
Herbert Friedmann (Birds)	Ian R. Straughan (Reptiles, Amphibians)
Jeffery Froehlich (Mammals) ²⁰	Stephen G. Tilley (Reptiles, Richard Wassersug (Reptiles, Amphibians)
Alfred L. Gardner (Mammals)	John C. Weske (Birds)
Richard Highton (Reptiles, Amphibians)	Alexander Wetmore (Birds)
Marshall A. Howe (Birds)	Ralph E. Wetzel (Mammals)
James E. Huheey (Reptiles, Amphibians)	James D. Williams (Fishes)
Philip S. Humphrey (Birds)	Don E. Wilson (Mammals)
George J. Jacobs (Reptiles, Amphibians)	
Frances C. James (Birds)	

SMITHSONIAN OCEANOGRAPHIC SORTING CENTER

Director	Betty J. Landrum
Senior Scientist	Robert P. Higgins
Supervisory Marine Biologists	Frank D. Ferrari Leslie W. Knapp Herman A. Fehlmann ²¹ Richard S. Houbrick ²²
Oceanographer	Catherine J. Kerby

²⁰ Appointed October 1, 1976.

²¹ Appointed April 24, 1977.

²² Transferred March 13, 1977.

NATIONAL ZOOLOGICAL PARK

Director	Theodore H. Reed
Deputy Director	Edward Kohn
General Curator, Office of Animal Management	Jaren G. Horsley
Curators	William A. Xanten, Jr.
	Miles S. Robert
	Harold J. Egoscue
	Dale L. Marcellini
	Michael L. Davenport
	Charles W. Pickett, Jr.
Scientist-in-Charge, Office of Zoological Research	John F. Eisenberg
Scientific Staff	Devra G. Kleiman
	Eugene S. Morton
	Gerald G. Montgomery
	S. Dillon Ripley
Associate in Ecology	
Research Associates:	
Jean Delacour	Rasnayagam Rudran
Wolfgang Dittus	John C. Seidensticker IV
Edwin Gould	James A. Sherburne
Theodore Grand	Susan A. Wilson
Robert Hoage	Bernard Zook
Edgardo Mondolfi	
Collaborators	Paul Leyhausen
Chief, Office of Animal Health	Mitchell Bush
Senior Veterinarian	Clinton W. Gray
Chief, Office of Pathology	Richard J. Montali
Research Associates:	
William Marsh	Charles O. Thoen
Gary Hodgen	Ulysses S. Seal
Robert Jenness	Tom J. Quan
Joseph P. Crisler	Marsha Serre
Curator-in-Charge, Conservation and Research Center	Christen M. Wemmer
Chief, Office of Education and Information	Judith White
Chief, Office of Graphics and Exhibits .	Robert E. Mulcahy
Chief, Office of Construction	
Management	Robert C. Engle
Chief, Office of Facilities Management .	Emanuel Petrella
Chief, Office of Police and Safety	Samuel L. Middleton, Jr.
Chief, Office of Management Services ..	Joe W. Reed
Director, Friends of the National Zoo ..	Sabin Robbins

OFFICE OF INTERNATIONAL PROGRAMS

Acting Director	Kennedy B. Schmertz
SMITHSONIAN FOREIGN CURRENCY PROGRAM	
Director	Kennedy B. Schmertz

Program Officer	LeRoy Makepeace
Grants Specialists	Betty J. Wingfield
	Francine C. Berkowitz

INTERNATIONAL LIAISON SECTION

Acting Director	Richard T. Conroy
Diplomat in Residence (United States Information Agency assignment)	H. W. Timrud
International Liaison Specialist	Sandra Tilghman

RADIATION BIOLOGY LABORATORY

Director	William H. Klein
Assistant Director	W. Shropshire, Jr.
Agricultural Engineer	John Sager
Anthropologist	Robert Stuckenrath
Biochemist	Maurice Margulies
Biologists	Elisabeth Gantt
	Rebecca Hayes
Biophysist	Merten Jabben
Developmental Biologist	Gloria Devore
Geneticist	Roy W. Harding, Jr.
Physicists	Bernard Goldberg
	Josef Grabowski
Physiological Ecologist	Bert Drake
	Stephen Turitzin
Plant Physiologists	Charles F. Cleland
	Gerald Deitzer
	John L. Edwards
	Tetzuya Katoh
	William O. Smith
Solar Radiation Biologist	David W. Hopkins

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

(Including Harvard Members of the Center for Astrophysics)

Director	George B. Field
Assistant Director	John G. Gregory
Imad Ahmad	John J. Cowan
Kaare Aksnes	Alex Dalgarno
Eugene H. Avrett	Vicenzo Danew
Thomas Ayres	Marc Davis
James G. Baker	Robert J. Davis
John A. Ball	Anthony J. DeGregoria
Doron Bardas	John P. Delville
Barbara Bell	Dale F. Dickinson
Edward L. Bosworth	Kate K. Docken
Graziella Brandvardi	Bruce Draine
Robert Brown	Theodore Dunham
A. G. W. Cameron	Andrea K. Dupree
Bartley Cardon	Bruce Elmegreen
Frederic Chaffee	Giuseppina Fabbiano
Eric J. Chaisson	S. Michael Fall
Steven Christensen	Giovanni G. Fazio
Giuseppe Colombo	Brian P. Flannery
Eustratios Constantinides	Edward L. Fireman
Alan F. Cook	William Forman

Peter V. Foukal
Fred A. Franklin
Daryl E. Freeman
Edward M. Gaposchkin
Margaret Geller
Giorgio Giacaglia
Owen Gingerich
Leon Golub
Paul Gorenstein
Carl A. Gottlieb
Richard E. Griffiths
Jonathan Grindlay
Mario Grossi
Steven L. Guberman
Herbert Gursky
Wendy Hagen
Frank R. Harnden, Jr.
Lee Hartmann
Timothy Heil
Henry F. Helmken
John P. Huchra
Luigi G. Jacchia
Glyn M. Jones
Christine Jones-Forman
Paul F. Julien
Paul Kalaghan
Wolfgang Kalkofen
Edwin Kellogg
Hiroshi Kinoshita
Barry Kirkham
Douglas Kleinmann
John L. Kohl
Yoshihide Kozai
Max Krook
Robert L. Kurucz
Charles J. Lada
David Latham
David Layzer
Myron Lecar
Alan M. Levine
Martin Levine
Randolph Levine
Margaret N. Lewis
Alan Lightman
Martha Liller
William Liller
A. Edward Lilley
Marvin Litvak
Marcus Machado
Brian G. Marsden
Ursula B. Marvin
Edward Mattison
Alan Maxwell
Richard E. McCrosky
Marshall Melin
Lawrence W. Mertz

Paul A. Mohr
James Moran
Stephen S. Murray
Giancarlo Noci
Robert W. Noyes
Michael Oppenheimer
Robert Pallavicini
Costas Papaliolios
William H. Parkinson
Daniel P. Parsignault
Cecelia Payne-Gaposchkin
Michael R. Pearlman
David Perlman
Geraldine Peters
William Press
Harrison E. Radford
John C. Raymond
Edmond M. Reeves
Mark Reid
Steven M. Richardson
Max Roemer
Fred Rosenberg
Robert Rosner
Micheline Roufosse
George B. Rybicki
Graham Ryder
Winfield W. Salisbury
Rudolph E. Schild
Edward J. Schmahl
Herbert Schnopper
Ethan J. Schreier
Daniel A. Schwartz
Charles Skinner
Joseph Schwarz
Zdenek Sekanina
Salvator Serio
Larry Smarr
Peter L. Smith
Robert F. Stein
Harvey D. Tananbaum
Paul O. Taylor
J. Gethyn Timothy
Wesley A. Traub
Wallace H. Tucker
Edwin L. Turner
Giuseppe S. Vaiana
Leon van Speybroeck
George Veis
Jorge E. Vernazza
Robert F. C. Vessot
George Victor
Peter Vitello
Henry I. Wadzinski
Deborah Watson
Trevor C. Weekes
Dorothy Weeks

Steven Weinberg
Fred L. Whipple
Charles A. Whitney

George L. Withbroe
John A. Wood
Fred Young

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

Director	Ira Rubinoff
Special Assistant to Director	Adela Gomez
Assistant Director	A. Stanley Rand
Assistant Director (Academic Programs)	Neal G. Smith
Senior Scientist	Martin H. Moynihan
Marine Coordinator	Robert W. Rubinoff
Facilities Manager	Thomas R. Borges
Librarian	Alcira Mejía
Staff Assistant	Elena Lombardo
Administrative Aide	Georgina DeAlba
<i>Scientific Staff:</i>	
Robert L. Dressler	David Ross Robertson
Mary Jane West Eberhard	Arcadio Rodaniche
Peter W. Glynn	Michael H. Robinson
Jeffrey B. Graham	Robert E. Silberglied
Gordon Hendler	Alan P. Smith
Egbert Leigh Jr.	Nicholas Smythe
Olga F. Linares	Donald Windsor
Gerald G. Montgomery	Hindrik Wolda
<i>Research Associates:</i>	
Humberto Alvarez	Pedro Galindo
Carlos Arellano L.	Carmen Glynn
Charles F. Bennett, Jr.	Yael Lubin
José Ignacio Borrero	Ernest Mayr
Deborah Caldwell Hahn	Barbara Robinson
Richard Cooke	W. John Smith
Reinaldo Días V.	Henry Stockwell
William G. Eberhard	Paulo E. Vanzolini
Nathan Gale	Martin Young

HISTORY AND ART

Assistant Secretary	Charles Blitzer
Special Assistants to the Assistant Secretary	Dean Anderson Susan Hamilton

ARCHIVES OF AMERICAN ART

NEW YORK (ADMINISTRATIVE OFFICE)

Director	William E. Woolfenden
Membership Secretary	Frances Mangiaracina
Clerk	Eve Peterson

WASHINGTON (PROCESSING OFFICE)

Deputy Director/Archivist	Garnett McCoy
Administrative Officer	Richard J. Nicastro

Secretary	Elizabeth C. James
Curator of Manuscripts	Arthur Breton
Assistant Curator of Manuscripts	Nancy Zembala
Archives Technicians	Linda Best
	Ann Ferante
	William Ballard
	Judith Allen
	Alicia Stamm
Microfilmer	Gloria Robinson

NEW YORK AREA OFFICE

Area Director	William McNaught
Secretary	Jemison Hammond
	Lillian Clagett
Field Researcher	Ivor Avellino

BOSTON AREA OFFICE

Area Director	Robert Brown
Secretary	Nancy Ferguson
Archives Technician	Joyce Tyler
Archives Clerk	Demetra Pulos

DETROIT AREA OFFICE

Area Director	Dennis Barrie
Administrative Aide	Marilyn Wheaton
Archives Technicians	Marilyn Florek
	Jeannie Bentley

SAN FRANCISCO AREA OFFICE

Area Director	Paul Karlstrom
Secretary	Judy Reis
Archives Technician	Nancy Jones

COOPER-HEWITT MUSEUM OF DESIGN AND DECORATIVE ARTS

Director	Lisa Suter Taylor
Administrator and Curator of Collections	Christian Rohlfsing
Administator	John Dobkin
Curator of Drawings and Prints	Elaine Evans Dee
Technician for Drawings and Prints ...	Xenia Cage
Curator of Textiles	Milton Sondag
Consultant for Textiles	Alice Baldwin Beer
Curator of Architecture and Design ..	Richard B. Oliver
Registrar	Elizabeth Burnham
Assistant Registrar	Sheila Silverman
Exhibits Specialist	Dorothy Twining Globus
Exhibits Research	Lucy Fellowes
Program Coordinator	Jane Clark
Membership Coordinator	Mary Kerr
Programs and Membership Assistant ...	Jennifer Jarvis
Librarian	Robert Kaufmann
Building Manager	Manuel Perez
Chief of Security	Luis Palau
Assistant to the Director	Pamela Theodoredis

Secretary to the Director	Susan Yelavich
Assistant for Administration	Heston Clapp
Receptionist	Moira Megargee
Publications Editor	Brenda Gilchrist
Picture Editor	Lisa Little
Textile Conservator	Lucy Commoner
Public Relations	Isabelle Silverman
Library Assistant	Margaret Luchars
Museum Shop Managers	Ann Mitchell, Jesse Nolan

FREER GALLERY OF ART

Director	Vacant
Assistant Director	Thomas Lawton
Associate Curator, Chinese Art	Hin-cheung Lovell
Associate Curator, Near Eastern Art ..	Esin Atil
Assistant Curator, American Art	Susan Hobbs
Head Conservator, Technical Laboratory	W. Thomas Chase III
Conservator	John Winter
Conservator	Lynda Zycherman
Research Curator, Far Eastern Ceramics.	John A. Pope
Research Assistant	Josephine H. Knapp
Librarian	Priscilla P. Smith
Administrative Officer	Willa R. Moore
Registrar	Eleanor Radcliffe
Assistant Registrar	Judy M. Keene
Honorary Associates	Richard Edwards
	Calvin French

HIRSHHORN MUSEUM AND SCULPTURE GARDEN

Director	Abram Lerner
Deputy Director	Stephen E. Weil
Administrative Officer	Nancy F. Kirkpatrick
Chief Curator	Charles W. Millard
Curator	Cynthia J. McCabe
Curator	Inez Garson
Curator	Frank Gettings
Curatorial Assistant	Phyllis Rosenzweig
Librarian	Anna Brooke
Conservator	Laurence Hoffman
Registrar	Douglas Robinson
Chief, Education	Edward Lawson
Chief, Exhibits and Design	Joseph Shannon
Program Manager (Auditorium)	Barbara Coleson
Information Specialist	Sidney Lawrence
Photographer	John Tennant
Building Service Coordinator	Frank Underwood

JOSEPH HENRY PAPERS

Editor	Nathan Reingold
Assistant Editor	Arthur P. Molella
Assistant Editor	Marc Rothenberg
Staff Historian	Kathleen Waldenfels
Research Assistant	Joel N. Bodansky
Secretary	Beverly Jo Lepley

NATIONAL COLLECTION OF FINE ARTS

Director	Joshua C. Taylor
Assistant Director	Harry Lowe
Administrator	H. Eugene Kelson
Adjunct Curator, 20th Century Painting and Sculpture .	Walter Hopps
Associate Curator, 20th Century Painting and Sculpture .	Harry Rand
Consultant, 20th Century Painting and Sculpture .	Adelyn Breeskin
Curator, 18th and 19th Century Painting and Sculpture	William H. Truettner
Associate Curator, 18th and 19th Century Painting and Sculpture	Robin Bolton-Smith
Curator, Prints and Drawings	Janet Flint
Assistant Curator, Prints and Drawings	Martina Norelli
Curator of Education	Peter Bermingham
Associate Curator of Education	Teresa Grana
Director, Renwick Gallery	Lloyd Herman
Associate Curator, Renwick Gallery ..	Michael Monroe
Curator of Research	Lois Fink
Chief, Office of Exhibition and Design .	David Keeler
Conservators	Thomas Carter
	Katherine Eirk
	Stefano Scafetta
Editor, Office of Publications	Carroll Clark
Chief, Office of Public Affairs	Margery Bvers
Chief, Office of Slides and Photography	Eleanor Fink
Chief, Office of Program Support	Lois Bingham
Coordinator, Inventory of American Paintings	Martha Andrews
Librarian, NCFANPG	William B. Walker

NATIONAL MUSEUM OF HISTORY AND TECHNOLOGY

Director	Brooke Hindle
Deputy Director	Silvio A. Bedini
Assistant Director for Administration .	Robert G. Tillotson
Assistant Director for Exhibits	Benjamin W. Lawless
Administrative Officer	Jean J. Middleton
Registrar	Virginia Beets
Assistant Registrar	Martha Morris
Special Events Officer	Geraldine E. Sanderson
Coordinator of Education	Alice R. Malone
Historian	Robert C. Post

APPLIED ARTS

Chairman	Vladimir Clain-Stefanelli
<i>Graphic Arts</i>	
Associate Curators	Elizabeth M. Harris
	Peter C. Marzio
<i>Numismatics</i>	
Curators	Vladimir Clain-Stefanelli
	Elvira Clain-Stefanelli

<i>Photographic History</i>	
Curator	Eugene Ostroff
<i>Postal History</i>	
Associate Curator	Franklin R. Bruns
Curator	Carl H. Scheele
Associate Curator	Reidar Norby
<i>Textiles</i>	
Curator	Rita J. Adrosko
Honorary:	
Numismatics	R. Henry Norweb Emery May Norweb
CULTURAL HISTORY	
Chairman	Richard E. Ahlborn
Senior Curator	C. Malcolm Watkins
<i>Costume and Furnishings</i>	
Curator	Rodris Roth
Associate Curator	Claudia B. Kidwell
Curator Emeritus	Anne W. Murray
<i>Ethnic and Western Cultural History</i>	
Curator	Richard E. Ahlborn
<i>Musical Instruments</i>	
Curators	John T. Fesperman Cynthia A. Hoover
Associate Curator	James M. Weaver
<i>Preindustrial Cultural History</i>	
Associate Curator	Anne C. Golovin
Honorary:	
Musical Instruments	Mrs. Sheridan Germann
Preindustrial Cultural History	Joan Pearson Watkins
INDUSTRIES	
Chairman	John T. Schlebecker, Jr.
<i>Extractive Industries</i>	
Curator	John T. Schlebecker, Jr.
Associate Curator	John N. Hoffman
Assistant Curator	George T. Sharrer
<i>Ceramics and Glass</i>	
Curator	J. Jefferson Miller II
<i>Transportation</i>	
Curators	John H. White, Jr. Melvin H. Jackson Don H. Berkebile
Associate Curator	
Honorary:	
Ceramics and Glass	Hans Syz
Manufacturing	Philip W. Bishop
Transportation	Peter B. Bell
NATIONAL AND MILITARY HISTORY	
Chairman	Margaret B. Klapthor

Military History
 Curator Craddock R. Goins, Jr.
 Associate Curator Donald E. Kloster

Naval History
 Curators Philip K. Lundeberg
 Harold D. Langley

Political History
 Curator Margaret B. Klapthor
 Associate Curator Herbert R. Collins
 Assistant Curator Edith P. Mayo

Eisenhower Institute for Historical Research
 Director Forrest C. Pogue
 Honorary:
 Naval History Dr. Lee Houchins
 Military History Anne S. K. Brown

SCIENCE AND TECHNOLOGY

Chairman Otto Mayr
 Senior Scientific Scholar Robert P. Multhauf

Electricity and Nuclear Energy
 Curator Bernard S. Finn
 Paul Forman

Mechanical and Civil Engineering
 Curators Robert M. Vogel
 Edwin A. Battison
 Otto Mayr

Medical Sciences
 Associate Curator Audrey B. Davis

Physical Sciences
 Associate Curator Deborah J. Warner
 Curator Faye Cannon
 Associate Curator Jon B. Eklund

Section of Mathematics
 Curator Uta C. Merzbach
 Honorary:
 Electricity and Nuclear Energy Ladislaus L. Marton
 Gerald F. Tyne
 Physical Sciences Arthur Frazier
 Science and Technology Bern Dibner

OFFICE OF EXHIBITS

Assistant Director for Exhibits Benjamin W. Lawless
 Chief, Exhibits Design Richard S. Virgo
 Chief, Exhibits Production Walter N. Lewis

OFFICE OF BUILDING MANAGEMENT

Building Manager Lawrence A. Bush
 Assistant Building Manager Donald A. Osbourn

NATIONAL PORTRAIT GALLERY

Director	Marvin Sadik
Assistant Director and Administrative Officer	Douglas E. Evelyn
Historian	Marc Pachter
Curator	Robert G. Stewart
Associate Curator	Monroe Fabian
Coordinator of Exhibitions	Beverly J. Cox
Curator of Education	Dennis O'Toole
Associate Curator of Education	Kenneth Yellis
Chief, Exhibits Design and Production .	Nello Marconi
Keeper of the Catalogue of American Portraits	Mona Dearborn
Editor	Frances S. Wein
Senior Conservator	Felrath Hines
Librarian (NPG-NCFA)	William B. Walker
Photographer	Eugene L. Mantie
Registrar	Suzanne Jenkins
Public Affairs Officer	Carol Cutler

OFFICE OF ACADEMIC STUDIES

Co-directors	Edward Davidson Gretchen Gayle Ellsworth
---------------------------	---

OFFICE OF AMERICAN AND FOLKLIFE STUDIES

Director	Wilcomb E. Washburn
Secretary	Susan Sunkin

FOLKLIFE UNIT

Director	Ralph C. Rinzler
Deputy Director	Robert H. Byington
Ethnomusicologist	Thomas Vennum, Jr.
Folklorist	Susan Kalcik
Folklorist	Jack Santino
Folklorist	Steven Zeitlin
Archivist	Frank Proschan
Program Coordinator	Jeffrey LaRiche
Designer	Janet Stratton

MUSEUM PROGRAMS

Assistant Secretary	Paul N. Perrot
Executive Assistant	William N. Richards
National Museum Act Coordinator	F. Matilda Wells

CONSERVATION ANALYTICAL LABORATORY

Chief	Robert M. Organ
Research Chemist	Jacqueline S. Olin
Paintings Conservator	Anton Konrad
Supervisory Conservator	Eleanor McMillan
Administrative Officer	Montague Smith
Conservator	Walter Angst
Clerk Typist	Claire M. Beerman

Conservator	Gregory Byrne
Thermoluminescence Dating	Kirkwood Cunningham
Conservator	Mary L. Garbin
Metallurgist	Martha Goodway
Chemist	Walter Hopwood
Conservator	Nikki Horton
Conservator Aide	Eleni Martin
Conservator	Edward McManus
Conservation-Scientist	Barbara A. Miller
Conservation-Scientist	Joan W. Mishara
Information Officer	Linda Scheifler
Chemist	Harold Westley
Secretary	Minnie Krantz

OFFICE OF EXHIBITS CENTRAL

Chief	James A. Mahoney
Assistant Chief	Constance Minkin
Administrative Officer	William M. Clark
Chief of Design	James A. Mahoney
Assistant Chief of Design	Kenneth V. Young
Chief of Production	John C. Widener
Assistant Chief of Production	Joseph W. Saunders
Supervisor, Exhibit Editors Office	Constance Minkin
Director, Motion Picture Unit	Karen Loveland
Supervisor, Museum Lighting Unit	Carroll B. Lusk

OFFICE OF HORTICULTURE

Horticulturist	James R. Buckler
Program Assistant	John W. Monday
Administrative Services Assistant	Michele C. Sengsourinh
Horticultural Technician	Lauranne C. Nash
Foreman, Grounds Management Division	Kenneth Hawkins
Foreman, Greenhouse-Nursery Division	Augst A. Dietz, IV

OFFICE OF MUSEUM PROGRAMS

Program Coordinator	Jane R. Glaser
Administrative Officer	Gwendolyn G. Baker
Assistant Program Manager, Training .	Margaret B. Parsons
Native American Museum Training Coordinator	James A. Hanson
Program Coordinator, Conservation Information Program	Elena Borowski
Television Production Specialist	Michael B. Sassani
Psychologist/Evaluator	Vacant
Reference Library Technician	Julie Diepenbrock

OFFICE OF THE REGISTRAR

Registrar	Philip Leslie
Assistant Registrar	Mary W. Lund
Management Assistant	Melva L. Simmons
Secretary	Stephen A. Boruchowitz

SMITHSONIAN INSTITUTION ARCHIVES

Archivist	Richard H. Lytle
Deputy Archivist	William A. Deiss
Associate Archivists	Alan L. Bain
	James A. Steed
Assistant Archivist	Richard V. Szary
Supervisory Archives Technician	Norwood N. Biggs
Oral Historian	Pamela Henson

SMITHSONIAN INSTITUTION LIBRARIES

Director of Libraries	Russell Shank ²³
Assistant Director for Management and Development	Elaine Sloan ²⁴
Administrative Librarian	Thomas L. Wilding
Administrative Officer	Mary C. Quinn
Assistant Director of Libraries for Technical Services	Vija L. Karklins
Conservator	Johannes H. Hyltoft ²⁵
Special Projects Librarian	Toni Waller ²⁶
<i>Acquisitions Service</i>	
Chief	Mildred D. Raitt
Gift and Exchange Librarian	Sharon H. Sweeting
Order Librarian	William B. Neff
Serials Librarian	Robert W. Hull
<i>Cataloguing Services</i>	
Chief	Mary Jane H. Linn
Cataloguers	Angeline D. Ashford
	Charles H. King
	Helen S. Nordberg
	Margaret A. Sealor
	Bertha S. Sohn
	Frances W. Penfold
	Joan B. Anderson ²⁷
<i>Processing Services</i>	
Chief	Mary J. Pierce
<i>Bibliographic Support Services</i>	
Chief	Victoria Avera
Assistant Director of Libraries for Institution Services	Jean C. Smith ²⁸
<i>Access Services</i>	
Chief	Jack F. Marquardt
Assistant Chief	Amy E. Levin
Bibliographer for the History of Science and Technology	Jack S. Goodwin
<i>Bureau Libraries</i>	
Chesapeake Bay Center for Environmental Studies Librarian	Mary Clare Gray

²³ Resigned July 1, 1977.

²⁶ Resigned May 31, 1977.

²⁴ Resigned January 7, 1977.

²⁷ Resigned June 24, 1977.

²⁵ Appointed November 1, 1976.

²⁸ Acting Director, July 2, 1977.

Freer Gallery of Art Librarian	Priscilla B. Smith
Hirshhorn Museum and Sculpture Garden Librarian	Anna M. Brooke
National Air and Space Museum Librarian	Catherine D. Scott
Reference Librarian	Dominick A. Pisano
National Collection of Fine Arts and National Portrait Gallery Librarian	William B. Walker
Reference Librarian	Katharine Ratzenberger
National Museum of History and Technology Librarian	Frank A. Pietropaoli
Reference Librarian	Charles G. Berger
Reference Librarian	Barbara F. Veloz
Rare Book Librarian	William J. Leugood ²⁹
National Museum of Natural History Librarian	Sylvia J. Churgin
Anthropology Branch Librarian	Janette K. Saquet
Botany Branch Librarian	Ruth F. Schallert
National Zoological Park Librarian	Mary Clare Gray
Reference Librarian	Diane S. Cunningham ³⁰
Smithsonian Astrophysical Observatory Librarian	Joyce M. Rey
Smithsonian Radiation Biology Laboratory Librarian	Mary Clare Gray
Smithsonian Tropical Research Institute Librarian	Alcira Mejia

*SMITHSONIAN INSTITUTION
TRAVELING EXHIBITION SERVICE*

Director	Dennis Gould
<i>Administrative Staff</i>	
Administrative Officer	Antonio Diez
Registrar	Emily Dyer
Assistant Registrar	Zaida Gipson
Assistant Registrar	Karen Hinkle
Accountant	Marie-Claire Jean
Secretaries	Michele Newman
	Karen Pedone
<i>General Exhibitions Program</i>	
Program Officer	Anne Gossett
Exhibitions Coordinator	Quinton Hallett

²⁹ Resigned June 3, 1977.

³⁰ Appointed March 20, 1977.

Exhibitions Coordinator	Regina Lipsky
Exhibitions Coordinator	William Kloss
Program Coordinator	Marjorie Share
<i>American Studies Program</i>	
American Studies Coordinator	Andrea Stevens
Program Coordinator	Robin Lynn ³¹
Exhibitions/Program Coordinator	Lary Rosenblatt ³²
Exhibitions Coordinator	Nancy Davis
Science Exhibitions Coordinator	Deborah Dawson
Science Exhibitions Coordinator	Martha Cappelletti
<i>"International Salute to the States" Program</i>	
Project Coordinator	Eileen Rose
Public Affairs/Exhibitions Coordinator .	Eileen Harakal
Secretary	Sharon Harrison

PUBLIC SERVICE

Assistant Secretary	Julian T. Euell
Executive Assistant	Vincent L. MacDonnell
Administrative Officer	Jewell S. Dulaney

ANACOSTIA NEIGHBORHOOD MUSEUM

Director	John R. Kinard
Training Officer	John Bradshaw
Administrative Officer	Audrey Archer
Supervisory Program Manager (Education)	Zora Martin-Felton
Program Manager (Outreach)	Fletcher A. Smith
Historian	Louise Daniels Hutchinson
Program Specialist	Carolyn Margolis
Exhibits Program Manager	Vacant
Visual Information Specialist	Larry E. Thomas
Supervisory Exhibits Specialist	James E. Mayo
Exhibits Specialist	James Campbell
Exhibits Specialist	James Daniels

DIVISION OF PERFORMING ARTS

Director	James R. Morris
Deputy Director	Richard P. Lusher
Assistant Director	Saul Baran
Administrative Officer	Edgar H. Dye
Director, Jazz and American Culture Program	Martin Williams
Coordinator, Jazz Oral History Project .	J. R. Taylor
Administrative Coordinator, African Diaspora Program	Rosie Lee Hooks
Program Officer, African Diaspora Program	Bernice Johnson Reagon
Director, Museum Programs and International Cultural Exchange	Shirley Cherkasky

³¹ Resigned January 1977.

³² Resigned July 1977.

Director, Education Services	Cynthia Hightower
Public Affairs Officer	Susanne Roschwalb
Assistant Public Affairs Officer	Manuel Melendez
Art Director	Janet B. Stratton
Development Officer	Barrick Groom
Production Manager	B. C. May

OFFICE OF ELEMENTARY AND SECONDARY EDUCATION

Education Program Coordinator	David W. Estabrook
Assistant Education Coordinator	Selma A. Searles
Education Specialist	Ann P. Bay

OFFICE OF SMITHSONIAN SYMPOSIA AND SEMINARS

Director	Wilton S. Dillon
Deputy Director	Dorothy Richardson
Program Specialist	Carla M. Borden

OFFICE OF TELECOMMUNICATIONS

Director	Nazaret Cherkezian
Senior Telecommunications Specialist .	William C. Grayson
Telecommunications Specialist	Paul B. Johnson
Radio Production Specialist	Ann M. Carroll
Production Coordinator	Lawrence E. Kline, Jr.
Assistant Production Coordinator	Jean B. Quinnette

SMITHSONIAN RESIDENT ASSOCIATE PROGRAM

Director	Janet W. Solinger
Assistant Director for Administration .	Edwin H. Able ³³
Assistant Director for Programming ..	Michael C. Alin
Program Coordinators	Paul J. Edelson
	Moya B. King
	Dena Sollins ³⁴
Associate Program Coordinators	Edward P. Gallagher
	Roberta Lederer
	Christine Parker
	Nancy H. Starr ³⁵
Consultant, Studio Arts	Andy Leon Harney
Membership Coordinator	Jeanne B. George
Art Director	Margaret V. Lee
Public Information Specialist	Helen A. Marvel
Assistant Public Information Specialist.	Michael L. Roney
Registrar, Associate Classes	Xenia Sorokin Arnelle
Registrar, Special Events, Trips and Tours	Nuzhat Sultan-Khan
Volunteer Coordinator	Elinor Emlet

SMITHSONIAN INSTITUTION PRESS

Acting Director	Edward F. Rivinus
Deputy Director	Felix C. Lowe
Administrative Officer	Georgianna Hahn
General Publications Managing Editor .	Maureen R. Jacoby

³³ Replaced by Darryl Hansen in September 1977.
³⁴ Replaced by Nancy H. Starr in July 1977.
³⁵ Replaced by Judith O'Sullivan in July 1977.

Series Managing Editor	Albert L. Ruffin, Jr.
Production/Design Manager	Stephen Kraft
Production Controller	Lawrence J. Long
Series Production Manager	Charles L. Shaffer
Distribution Manager	Frederick H. MacVicar
Editors	Mary Frances Bell
	Louise J. Heskett
	Joan B. Horn
	John Korytowski
	Nancy L. Powars
	Barbara Spann
	Ruth Spiegel
Writer/Editor	Hope G. Pantell
Designer to the Smithsonian	Crimilda Pontes
Designers	Natalie Bigelow
	Elizabeth Sur
Publications Assistant	Theresa F. Hostetler
Publications Technician	Rosa E. Maness
Publications Clerks	Brenda Green
	Florence R. Morgan

SMITHSONIAN MAGAZINE

Editor and Publisher	Edward K. Thompson
Executive Editor	Ralph Backlund
Members, Board of Editors	Don Bronkema
	Grayce P. Northcross
	Edwards Park
	Bennett Schiff
	John P. Wiley, Jr.
	Richard L. Williams
Associate Publisher	Joseph J. Bonsignore
Advertising Director	Thomas H. Black
Circulation-Promotion Director	Anne Keating
Picture Associate	Caroline Despard
Production	Nannie Shanahan
Business	Carey O. Randall

VISITOR INFORMATION AND ASSOCIATES' RECEPTION CENTER

Director	Mary Grace Potter
Deputy, Information Services	Carolyn Clampitt
Program Coordinator, Independent Volunteer Placement Service	Sally S. Covel
Public Inquiry Specialist	Ann Perper
Officer Manager	Margaret Ellis
Assistant Weekend Coordinator	Jennifer Williams
Editor	Maria Heasley
Program Assistant	Kathryn Simpson
Building Coordinator	Gilmer VanPoole
Building Coordinator	Grace Gast

MEMBERSHIP AND DEVELOPMENT

Director	James McK. Symington
-----------------------	-----------------------------

OFFICE OF DEVELOPMENT

Deputy Director	James R. Lyons
Associate Development Officers	Arthur W. Gardner
	E. Jeffrey Stann
Research Associate	Martha McLure

NATIONAL ASSOCIATES PROGRAM

General Manager	Robert H. Angle
<i>Regional Associates Program</i>	
Program Coordinator	Charlene James
Program Assistant	Amy Kotkin
<i>Contributing Membership</i>	
Program Assistant	Jessie A. Brinkley
<i>Associates Travel Program</i>	
Travel Manager	Jacqueline Austin
Program Coordinators	Prudence Clendenning
	Barbara Schneider

ADMINISTRATION

Assistant Secretary	John F. Jameson
Administrative Officer	John Motheral
Director, Agenda Office	Robert L. Farrell
Director, Office of Audits	Chris S. Peratino
Assistant Director	Patrick J. Stanton
Assistant Director	Benedict T. Maltagliati

FINANCIAL SERVICES

Treasurer	T. Ames Wheeler
Assistant to the Treasurer	Christian C. Hohenlohe
Director, Office of Programming and Budget	Jon E. Yellin
Director, Business Management Office .	Richard Griesel
Director, Accounting Division	Allen S. Goff
Director, Grants and Insurance Division	Phillip A. Babcock
Director, Investment Accounting Division	Ernest A. Berger
Director, Smithsonian Museum Shops .	James J. Chmelik
Director, Belmont Conference Center ..	Mary B. Force

OFFICE OF THE GENERAL COUNSEL

General Counsel	Peter G. Powers
Associate General Counsel	Alan D. Ullberg
Assistant General Counsels	George S. Robinson
	Suzanne D. Murphy
	Marie C. Malaro
	Robert A. Dierker
	James I. Wilson
	John W. Lang III

SUPPORT ACTIVITIES

Director	Richard L. Ault
Assistant Director	Michael R. League
Administrative Officer	Mary Anne Sedillo
Contracting Officer, Contracts Office ..	Elbridge O. Hurlbut
Director, Management Analysis Office .	Ann S. Campbell
Director, Office of Computer Services .	Stanley A. Kovy
Director, Office of Equal Opportunity .	Will Douglas, Jr.
Director, Office of Personnel Administration	Howard Toy
Director, Office of Protection Services .	Robert B. Burke, Jr.
Chief, Travel Services Office	Betty V. Strickler
Director, Office of Plant Services	Kenneth E. Shaw
Director, Office of Facilities Planning and Engineering Services	Phillip K. Reiss
Director, Office of Printing and Photographic Services	James H. Wallace, Jr.
Director, Office of Supply Services	Harry P. Barton
Director, International Exchange Service	John E. Estes

WOODROW WILSON INTERNATIONAL CENTER FOR SCHOLARS

Director	James H. Billington
Deputy Director	George R. Packard
Editor, Wilson Quarterly and Center Publications	Peter Braestrup
Librarian	Zdenek V. David
Publications Officer	Elizabeth G. Dixon
Assistant Director for Administration .	William M. Dunn
Coordinator, State and Local Government Program	Robert B. Hawkins, Jr.
Special Assistant to the Director	Edythe M. Holbrook
Assistant Director for Fellowship Selection and Coordinator, Division of Resources, Environment, and Interdependence	Michael J. Lacey
Secretary, Latin American Program ...	Abraham F. Lowenthal
Special Assistant to the Director	George Liston Seay
Secretary, Kennan Institute, and Assistant Director	S. Frederick Starr
Executive Assistant to the Director	Mernie Wright Weathers
Secretary, International Security Studies Program	Samuel F. Wells, Jr.

JOHN F. KENNEDY CENTER FOR THE PERFORMING ARTS

Honorary Chairmen	Mrs. Jimmy Carter Mrs. Gerald R. Ford Mrs. Richard M. Nixon Mrs. Lyndon B. Johnson Mrs. Aristotle Onassis Mrs. Dwight D. Eisenhower
Chairman	Roger L. Stevens

Vice Chairmen	Charles H. Percy
	Henry Strong
Secretary	Frank N. Ikard
Assistant Secretary	Charlotte Woolard
Treasurer	W. Jarvis Moody
Assistant Treasurers	James F. Rogers
	William H. Ryland
	Henry Strong
General Counsel	Harry C. McPherson, Jr.
Associate Counsel	William W. Becker
Executive Director of Performing Arts .	Martin Feinstein
General Manager of Theaters	Alexander Morr
Director of Operations	Thomas R. Kendrick

READING IS FUNDAMENTAL, INC.

Chairman of the Board and President .	Mrs. Robert S. McNamara
National Executive Director	Mrs. Ruth Graves
Director of Operations	Arnold Baker
Deputy Director for Administration and Program Services	Joyce Chabot
Deputy Director for Resource Coordination	Barbara Atkinson

SMITHSONIAN SCIENCE INFORMATION EXCHANGE, INCORPORATED

President	David F. Hersey
Vice President, Medical Division	Donald A. Elliott
Vice President, Professional Services ..	Donald A. Elliott
Vice President, Program Planning, Management and Administration ...	David W. Lakamp
Vice President, Science Division	Vacant
Vice President, Data Processing	Martin Snyderman
Treasurer	David W. Lakamp
Assistant Treasurer and Secretary	Evelyn M. Roll
Marketing Manager	Janet D. Goldstein

MEDICAL DIVISION

Director	Donald A. Elliott
Director, Current Cancer Research Project Analysis Center	Donald A. Elliott
Deputy, Medical Division	Charlotte M. Damron
Chief, Medical Sciences Branch	Charlotte M. Damron

SCIENCE DIVISION

Director	Vacant
Deputy Science Division	Samuel Liebman
Chief, Behavioral Science Branch	Rhoda Goldman
Chief, Social Sciences Branch	Ann Riordan
Chief, Agricultural Sciences Branch ...	William T. Carlson
Chief, Biological Sciences Branch	James R. Wheatley, Jr.
Chief, Chemistry Branch	Samuel Liebman
Chief, Materials and Engineering Branch	William H. Payne

Chief, Physics, Mathematics and Electronics Branch	Robert Summers
Chief, Earth Sciences Branch	Francis L. Witkege

DATA PROCESSING DIVISION

Director	Martin Snyderman
Deputy	Bernard L. Hunt
Manager, Input Services Branch	Jack Devore
Manager Systems Development Branch.	Bernard L. Hunt
Manager, Programming and Reports Services Branch	Robert A. Kline
Manager, Computer Operations Branch.	Paul Gallucci

NATIONAL GALLERY OF ART

President	Paul Mellon
Vice President	John Hay Whitney
Director	J. Carter Brown
Assistant Director	Charles P. Parkhurst
Treasurer	Robert C. Goetz
Administrator	Joseph G. English
Secretary and General Counsel	Robert Amory, Jr.

Staff

Assistant to the Director, Music	Richard Bales
Assistant to the Director, National Programs	W. Howard Adams
Assistant to the Director, Public Information	Katherine Warwick
Assistant to the Director, Special Events	Robert L. Pell
Planning Consultant	David W. Scott
Construction Manager	Hurley F. Offenbacher
Curator of American Painting	John H. Wilmerding
Chief Librarian	J. M. Edelstein
Chief, Education	Margaret I. Bouton
Head, Extension Program Development .	Joseph J. Reis
Head, Art Information Service	Elise V. H. Ferber
Editor	Theodore S. Amussen
Chief, Photographic Laboratory	William J. Sumits
Curator of Photographic Archives	Ruth Rowe Philbrick
Senior Conservator	Victor C. B. Covey
Head, Exhibitions and Loans	Jack C. Spinx
Head, Department of Design and Installation	Gaillard F. Ravenel
Registrar	Peter Davidock, Jr.
Curator of Early Italian and Tuscan Painting	David A. Brown
Curator of Graphic Arts	Andrew C. Robinson, Jr.
Curator of French Painting	David E. Rust
Curator of Sculpture	Douglas Lewis, Jr.
Curator of Twentieth-Century Art	E. A. Carmean, Jr.
Curator of Northern and Later Italian Painting	Sheldon Grossman
Curator of Northern European Painting	John O. Hand

Curator of Dutch Painting	Arthur K. Wheelock
Curator of Spanish Painting	Anna Voris
Assistant Treasurer	James W. Woodard
Assistant Administrator	George W. Riggs
Assistant General Counsel	Elizabeth A. Croog
Assistant Secretary	Kathryn K. Bartfield
Personnel Officer	Jeremiah J. Barrett



