

SMITHSONIAN INSTITUTION

SERVICES PROVIDED TO FEDERAL AGENCIES,
OTHER GOVERNMENTAL AND PRIVATE ORGANIZATIONS, AND
EDUCATIONAL INSTITUTIONS

from

FY 1971 FEDERAL "SALARIES AND
EXPENSES" APPROPRIATIONS

*Submitted to OMB
as part of FY 73
Budget review*

June 21, 1972
Office of Programming and Budget

July 30, 1971

TO :

FROM : T. Ames Wheeler, Treasurer

SUBJECT: Services provided to individuals and organizations outside the Smithsonian Institution

In conjunction with their fiscal year 1973 budget review, the Office of Management and Budget has requested that the Smithsonian submit a report describing the various Institutional services provided during fiscal year 1971 to persons or organizations outside of the Institution. These recipients would include, but not be limited to, researchers and students, government agencies, state and local groups, business or industrial enterprises, other museums, professional associations, academic institutions, and international organizations. This report should be restricted to services resulting from the use of our federal appropriations (e.g. the SAO satellite tracking program would be excluded because it is a contracted service).

The kinds of services we provide vary across the Institution, but usually can be categorized under one or some combination of the following headings:

- a. Use of our buildings or other facilities (office or laboratory space etc.).
- b. Use of our collections and information files (photographs, reports, analytical data, archive and library resources, etc.).
- c. Use of our staff expertise (such as for research advice, identification or dating services, exhibition techniques, museum administration, conservation procedures, educational services, etc.).

To facilitate assembly of the overall Smithsonian report, your information should be submitted, to the extent possible, under the above headings, using the attached, or a similar, format.

Column 1 - Identify the specific recipient of the service. Give the names of major organizational recipients of services. Some individual recipients need not be detailed by name, but may be reported as a group (e.g. for elementary and secondary students) provided an estimate is given for the number of persons, and they all receive essentially the same kind of service.

Column 2 - Briefly describe what kind of service was provided, duration if appropriate, and the benefits derived by the recipient.

Column 3 - Estimate the cost of the service (personnel time and/or other costs). This can be an educated guess, and should involve "S&E" funds only.

Column 4 - Comment on any reciprocal services, or benefits, which accrue to your unit or the Institution, as a result of providing this service. If there was any actual reimbursement from the recipient, please indicate the amount.

Please submit your report to the Office of Programming and Budget by September 15, 1971. Staff members of that office will answer questions and provide assistance. Your report need not be an exhaustive listing, but should be sufficiently complete to indicate the scope, diversity, and volume of services you provided. We believe this information will help to reinforce our budget requests.

Attachment

Services Provided to Federal Agencies,
Other Governmental and Private Organizations, and
Educational Institutions

from

FY 1971 Federal "Salaries and
Expenses" Appropriations

TABLE OF CONTENTS

	Page
INTRODUCTION.....	1
<u>SCIENCE</u>	
Center for Short-Lived Phenomena	4
Center for the Study of Man.....	4
Chesapeake Bay Center for Environmental Studies	5
National Air and Space Museum.....	6
National Museum of Natural History	8
National Zoological Park	10
Radiation Biology Laboratory	13
Smithsonian Astrophysical Observatory.....	15
Smithsonian Oceanographic Sorting Center	16
Smithsonian Tropical Research Institute	17
<u>HISTORY AND ART</u>	
Archives of American Art.....	20
Freer Gallery of Art	20
Hirshhorn Museum and Sculpture Garden.....	21
National Armed Forces Museum Advisory Board.....	22
National Collection of Fine Arts	22
National Museum of History & Technology.....	24
National Portrait Gallery.....	26
<u>OTHER</u>	
Academic and Educational Programs	30
Anacostia Neighborhood Museum	31
Division of Performing Arts.....	32
International Exchange Service.....	33
Office of Exhibits.....	34
Office of Museum Programs.....	35
Office of International Activities	36
Smithsonian Libraries.....	37

INTRODUCTION

This report summarizes and presents a partial listing of services provided, for the most part, in FY 1971 by the Institution through application of its federal "Salaries and Expenses" appropriation, largely to various governmental, educational, and private organizations. During the course of the budget review of the Smithsonian's request for FY 1972, the Office of Management and Budget examiners suggested that it would be helpful if such a summary could be compiled.

The Institution's service activities are many, reach extensive and varied audiences and, in many instances, have beneficial impacts which can only be sketchily measured or which may not be realized for years. In one sense, the entire annual amount received for "Salaries and Expenses" operations (FY 1971; \$36,895,000) can be viewed as service oriented for the general public. It would make no difference whether funds were directed at pursuing museum and collection related long-term basic research (say, in the systematic investigation and mapping of the continental distribution of conodont fossils, which are indirect indicators to industry of possible deposits of oil), or at planning and producing particular exhibits (say, the current Institutional exhibits efforts pointing to the American Revolution Bicentennial celebrations, which will be viewed and enjoyed by, as yet, uncounted millions of visitors).

But, an explanation of services provided to various audiences summing to the total of our federal resources, was not the approach used in assembling this report. In a narrower sense, the Institution is responding, at any moment of time, to various discrete demands being placed on it by organizations and individuals. The Institution's service response can take various forms. For example, the loan of a portrait for exhibit at another museum; or a complex biological analysis of drinking water samples for a state agency. Some services provided are recurring in nature, and directed to a relatively identifiable consuming sector; for example, the popular school tour program for elementary and secondary school students, or the curatorial identification services involving plants, stamps, currencies, or biological remains, for law enforcement agencies.

As in the case of the broader interpretation, there is no present way to measure the beneficial impact of these more identifiable services. For example, we know that the school tour program is successful, because the enthusiasm and response of the teachers and administrators are immense. But we do not know to what extent we have helped to generate that spark of a child's curiosity which may help him become a renowned artist or scientist. Just as true, there is no present way to identify precisely costs associated with many of the discrete services rendered. The paleobiologist provides his expertise to the Federal Bureau of Investigation, the amateur archeologist, and to other members of his discipline indiscriminately, because he is part of an Institution whose basic mission is "the increase and diffusion of

knowledge among men." His mix of activity may be directed virtually simultaneously at completing several research papers, conceptualizing an important aspect of a forthcoming exhibit, and responding to technical inquiries from a number of individuals, organizations or agencies.

Nevertheless, using the narrower approach, this report attempts at least to partially describe and quantify the scope and extent of discrete Institutional services provided, by some of its operating units, to persons and organizations during the course of FY 1971. Selected Institutional bureau and office directors were asked to list particular organizations or groups which were served, and ways they were served. The bureau and office directors also were asked to estimate, to the extent possible, the "S&E" costs associated with providing these services.

The results are summarized in the following pages. The detailed listings are by no means complete, but they are representative of the broad range of Institutional service activity in FY 1971. The "S&E" resources associated with providing the identified services are only approximations. They sum to \$2,882,000 ^{1/}, and while not precise the figure indicates that at least 5% to 10% of the total "S&E" resource base was devoted to providing specific services and assistance to various groups and individuals.

The information will hopefully provide a better basis for understanding how the staff expertise, collections, facilities and other federal resources of the Institution are utilized by specific social and economic sectors.

^{1/} To this figure can be added an approximate \$400,000, estimated as the minimum cost of handling and answering mail and phone inquiries of the general public requiring some specific mail response involving identification services, collections information, information regarding exhibits or events, or other data, aside from routine mailings of pamphlets, brochures, newsletters, and guides. The Institution, after eliminating known areas of duplication, annually handles about 2,000,000 pieces of mail, of which perhaps 150,000 represent incoming general inquiries of this nature. In addition there may be about 100,000 phone inquiries of a similar character. The dollar estimate incorporates handling, postage, other costs, and the time and effort to compose a response ranging from secretarial to curatorial inputs. It clearly becomes rather difficult to identify true costs associated with the provision of Institutional services such as this, and the estimate is probably conservative. The approximations provided by bureaus and offices summing to \$2,882,000 incorporate this type of activity only for a few units whose response indicated they made some attempt to include the costs of providing such a service.

SCIENCE

CENTER FOR SHORT-LIVED PHENOMENA

The Center for Short-Lived Phenomena is an early alert system and clearinghouse for the reception and dissemination of information on short-lived natural and man-made events. The Center alerts scientists, agencies, and research institutions to major short-lived ecological, geophysical, and astrophysical events occurring anywhere in the world. It quickly communicates data and descriptive information on events such as large oil spills, major atmospheric and water pollution events, high biocide residue discoveries, massive fauna and flora mortalities, volcanic eruptions and major earthquakes, the birth of new islands, the fall of large fireballs and meteorites, sudden changes in biological and ecological systems, such as animal migrations and colonizations, and any other natural or man-made phenomena that require rapid response from scientists in order that they may take advantage of research opportunities while environmental changes are occurring. In FY 1971, federally appropriated funds of \$67,000 were devoted to these purposes.

During the past four years the Center has reported over 400 short-lived events that occurred in 86 countries and all the world's oceans, including 189 earth science events, 142 biological and ecological events, 61 astrophysical events, and 9 urgent anthropological and archaeological events that led to 297 scientific field expeditions. The Center has issued over 1,300 event notification and information reports to thousands of research scientists and institutions, published 67 event reports, handled a communications volume of over half a million cable words, and a mail volume of 800,000 event notification and information cards. Its reporting network now consists of over 2,800 voluntary scientists and scientific field stations in 148 countries and territories. In FY 1971 the Center was able to report every major environmental pollution event, volcanic eruption, earthquake, oil spill, and meteorite fall, usually within hours after the event occurred.

CENTER FOR THE STUDY OF MAN

The Center for the Study of Man coordinates research and development on a series of important anthropological programs. The American Indian Program is presently concerned primarily with the development of the 20 volume Encyclopedia of North American Indians. Another aspect of this program is the development of a system for providing scholarly educational materials concerning Indians to individuals, schools, and Indian communities. In addition, the Center helps to coordinate educational intercommunication among Indians themselves, with scholars, and with appropriate government and private agencies. The Encyclopedia effort represents the primary focus of activities of the Center for the next four to five years, and currently consumes the major portion of annual federal appropriations. The target date for publication is the Bicentennial year 1976.

Other particular services provided in FY 1971, as in other years, to federal organizations and various groups include the following:

Colleges and Universities. The Urgent Anthropology Program identifies, publicizes, and finances needed research in geographical areas that are undergoing rapid environmental change as a result of urbanization, improved communications, better transportation, and other factors. The objective is to salvage and preserve information in selected rapidly changing areas before time and events erase our ability to understand the cultures that existed.

The Center supports a small grants program to qualified investigators for research on urgent anthropological studies. About fifteen projects were funded in FY 1971 at a total cost of approximately \$15,000.

U.S. Congress, Federal Agencies, and the General Public. Approximately fifty times per year, the Center provides advice and assistance to the federal government on problems relating to the country's American Indian programs. Approximately 800 requests from the general public also are received for information on maps, bibliographies, publications, language, traditions, and customs of the American Indian. The Center also is involved with the Research Branch of The Economic Development Administration, Department of Commerce, in investigating the relationship between social structure and economic development in a number of American Indian communities. The provision of this expertise and goodwill is estimated to have required about \$9,000 of the federal salaries and expenses appropriation in FY 1971.

CHESAPEAKE BAY CENTER FOR ENVIRONMENTAL STUDIES

The Chesapeake Bay Center is an approximate 2,000 acre natural and semi-natural area located seven miles south of Annapolis, Maryland. It is the largest facility in the nation available for the study of land-water (estuarine) systems. Through the Center, the Smithsonian is participating in the Chesapeake Research Consortium, Incorporated, a non-profit organization devoted to researching the environmental problems of biological populations, communities and ecosystems, and scientific land management. Other members of the Consortium include the University of Maryland, Johns Hopkins University, and the Virginia Institute for Marine Sciences.

The Center is situated on the western shore of Chesapeake Bay, a terrestrial setting ranging from marshes, abandoned pastures, upland hardwood forests, and land still in cultivation. Directly across the estuary from the Center are densely populated residential communities, a contrasting type of land use valuable for comparative study.

In FY 1971, approximately \$68,000 of federal "S&E" resources were devoted to furthering the research and public service activities of the Center as follows:

A. A plan for a complete ecosystem study of the Rhode River Watershed was developed as a primary research program of the Center, in cooperation with the other members of the Consortium. Substantial data has been gathered to aid management decisions regarding planning and zoning in Anne Arundel County, Maryland, and in the management of the Chesapeake Bay as a natural resource. Scientific information, collected by the Center, was instrumental in planning for the construction of tertiary sewage-treatment facilities for a housing project in the watershed, and for the planning of erosion control during construction of a powerline right-of-way. These actions represent valuable precedents in the application of research-produced information for purposes of environmental management by industry and public agencies.

B. Education activities were accelerated with the offering of a course in estuarine ecology by the Biology Department of the Johns Hopkins University. Two postdoctoral fellows were supported at the Center by the Smithsonian Research Foundation. Six universities in the Baltimore-Washington area utilized the Center for field work, and the Center continued to provide instruction for children at the Human Resources Development Center of the Community Action Agency in Anne Arundel County.

NATIONAL AIR AND SPACE MUSEUM

In FY 1972, the Congress appropriated \$1.9 million for the redesign of the National Air and Space Museum (NASM) building. This is to be constructed on the Mall and opened to the public in 1976 as part of the American Bicentennial Celebration. The building will host over 5 million visitors a year, and will serve as the national focal point for the collection, exhibition and historical research of aviation and space flight.

As the new building and scale of operations move closer to reality, a noticeable increase in inquiries, public service activities, and demands for educational programs is occurring. Aside from its regular public exhibits programs, services provided to federal organizations and other groups in FY 1971 would include the following kinds of activity.

Industry, Colleges, and Universities, Independent Organizations and Researchers. In providing services to these groups, approximately \$70,000 of federal manpower and other resources were utilized during FY 1971. Examples of activities are:

- A. Once a month the Museum provided a meeting place for the American Aviation Historical Society. The Society in turn, gives expert assistance in sorting and identifying various collection materials.
- B. Once a week the Potomac Aero Squadron uses the Silver Hill, Maryland, facility for their meetings. On a voluntary basis, the organization is restoring the Curtiss F 9C-2 aircraft.
- C. Airlines and representatives of the aircraft industries frequently come to the museum to use its expertise and collections in special projects. For example, American Airlines utilized various Aero Engine slides in conjunction with the work of their educational department; Lockheed and Ram Jet sent representatives to the NASM in relation to researching the history of their companies.
- D. Staff of the Experimental Aircraft Museum and the Canadian National Museum consulted with NASM staff during the year on special exhibits and other projects.
- E. Stanford University was provided with consultation regarding early propeller experimentation of Durand.
- F. Various authors were given advice and consultation relating to the publication of their works. The NASM Historical Research Center was heavily utilized during the course of the year. The Center provides the central location for researchers and authors studying aerospace history.
- G. In addition, several hundred visitors from various organizations and industries were given special tours of the preservation and restoration facilities at Silver Hill. These usually resulted in follow-up contacts regarding provision of research materials, photographs, specimen loans, or assistance in dating, identification, and other services regarding some aspect of their particular projects.

Federal Agencies and Organizations. A variety of federal organizations were served during the course of the fiscal year, and the following constitute representative samples. It is estimated that around \$1,000 of federal effort and resources were expended to:

- A. Provide general tours of the collections to various U.S. military groups.
- B. Provide assistance to the USIA in the filming of Japanese aircraft with historical background for a television program.
- C. Help the U.S. Patent Office with research on the F-4A aircraft.

NATIONAL MUSEUM OF NATURAL HISTORY

The National Museum of Natural History maintains the largest reference collections in the Nation and conducts broad programs of exhibits and basic research on man, plants, animals, fossil organisms, rocks, minerals, and materials from outer space. Its collections contain approximately one-third of all the natural history specimens in the United States. There is no other repository anywhere in the world with so much documentary material for research purposes, for identification services, and for determining the composition of biota from millions of years ago to the present. The Museum's stature and position in the area of natural science study generate an enormous demand for various services.

A complete itemization of specific ways the Museum services public demands, or responds to the needs of particular federal agencies, academic institutions, or private organizations is beyond the scope of this summary. The same is true of providing estimates regarding the annual draw against federal resources associated with these responsibilities. Some approximations (summing to \$175,000) and examples of important specific activities, however, are listed below.

Federal Agencies and Organizations.

A. Department of Agriculture; Crops Research Division, and Entomology Division. Collaborators work with collections and utilize Institutional facilities, laboratories, and staff expertise. Space is provided (approximately 9,000 square feet) for some 35 personnel of the USDA Entomology Division and their associated specimen collections. Maintenance cost to the Institution is estimated at \$20,000.

B. Department of Defense (Southeast Asia Mosquito Project). This is a large project, performed under contract, to which the Museum is providing research space for 12 persons and associated specimen collections (3,000 square feet of space) and access to other collections, equipment, and laboratory facilities. Maintenance costs to the Institution are estimated at approximately \$7,000 per year.

C. Department of Interior; Fish and Wildlife Service. Space is provided for Interior personnel and research, associated collection storage (approximately 18 people and 8,000 square feet). Maintenance cost to the Institution is estimated at \$19,000. Unit has access to museum collections, laboratories, and staff expertise.

D. National Institutes of Health; Tumor Registry. Provision of work space, specimen storage, and other facilities, to develop collections and studies on neoplasma in invertebrate animals. Space maintenance (for approximately 1,000 square feet) to Institution is estimated at \$3,000. This is contract work for the NIH involving 5 or 6 people.

E. National Oceanic and Atmospheric Administration; Systems Laboratory. Provision of work space for around 12 Commerce employees, associated specimen storage, and other facilities. Space maintenance (approximately 4,000 square feet) is estimated at \$8,000.

F. U.S. Geological Survey; Paleontology and Stratigraphy Branch. Collaborators work with collections and utilize Institutional facilities, laboratories, libraries, and staff expertise. Extensive space is provided for USGS personnel (approximately 56 persons) and collection storage, involving about 52,000 square feet. Maintenance of this area is estimated at about \$118,000.

Other Examples. Examples of specific museum services provided to other users would include:

A. Use of the National Anthropological Archives by the Bureau of Indian Affairs, the Departments of Justice and Health, Education and Welfare, and various colleges and universities.

B. Frequent use of the Museum's Anthropology Processing Laboratory, and the National Herbarium Service Unit, by various Federal agencies, educational institutions, and other organizations. Staff expertise is utilized in various ways to identify biological remains, narcotic and other plants, and other material evidence for the Federal Bureau of Investigation, local law enforcement agencies, and police units outside the Washington area.

C. Loans and transfers of specimens, involving tens of thousands of items each year, further research in various organizations throughout the United States and in many foreign countries.

D. Senior scientists and students from colleges and universities utilize the Washington collections, the Museum's facilities, and staff expertise heavily during the course of each year. In addition, several thousand inquiries from the general public involving identification or other services require significant resources. The draw against Institutional resources for providing these various services to the academic community, the federal government, and the general public is difficult to estimate, but (for example) museum consultation with NSF personnel consumes about 20 man-days, and the Defense Department about 22 man-days, per year. In the Departments of Botany and Invertebrate Zoology, it is estimated that at least 20% of all professional staff time is devoted to servicing outside demands.

NATIONAL ZOOLOGICAL PARK

The National Zoological Park was established for the "advancement of science and the instruction and recreation of the people." To accomplish this mission, the Zoo exhibits a broad zoological collection of animals from all parts of the world in natural surroundings; maintains an information and education program for the benefit of the visiting public; and promotes scientific research, including biomedical programs, for increased scientific knowledge and for the benefit of the animals so that visitors can enjoy them in prime health.

In addition to its general exhibition program, the services the Zoo provides to the public, federal agencies, community organizations, schools, and others, are many and varied. The following list by no means is complete. The federal funding figures (\$64,000) associated with the provision of these services are merely estimates. The examples, however, provide a representative cross section of the kinds of activity which the Zoo promoted and supported in FY 1971.

Colleges, Universities, Other Institutions and Organizations. The Zoo provided facilities and specimens to professional staff from a number of institutions, along with collaborative research, educational training, and supervision of graduate and undergraduate students. A variety of animals were lent to other Zoos for rounding out collections, breeding, and conservation purposes. The National Zoo received specimens in return. Another major service involves consultation and advice to other Zoos concerning design of new exhibits and buildings.

It is estimated that in FY 1971 perhaps \$30,000 of federal resources were utilized in these types of services. Examples would include:

A. American Association of Zoological Parks and Aquariums; provided consultation and advice.

- B. George Washington University; the Zoo provides office space and pathology facilities for research and education. In return, the Zoo receives the services of a professional pathologist in its daily operations.
- C. International Union for Conservation of Nature and Natural Resources; consultation and advice on animal conservation and preservation.
- D. Northern Virginia Orthopedic Research Institute; collaborated on research project on gorilla rheumatism.
- E. Peabody Museum; loaned bamboo rat collection for special research project.
- F. Patuxent Wildlife Research Center; use of Zoo hospital and pathological facilities in collaboration with National Zoo research project on status of avian malaria.
- G. The Research Ranch, Incorporated; provided consultation and advice.
- H. University of Maryland; provided office space and occasional secretarial assistance on an animal research project; also loaned spiny rats for graduate research project.
- I. University of Pennsylvania, and other institutions; about 25 to 30 undergraduates from several institutions utilized Zoo facilities (library, papers, reports, bibliographies, animals), over the course of the year for a variety of training and educational purposes.
- J. Wild Animal Propagation Trust; provided consultation and advice.

Elementary, Secondary, and General Public Educational Assistance.
 These services probably consumed about \$28,000 of federal "S&E" resources in FY 1971.

A. Educational services and assistance are called for on an extensive basis by the millions of Zoo visitors each year. The Zoo collaborates with a citizens group called the Friends of the National Zoo (FONZ) to organize and lend focus to a number of specially created educational activities to benefit local school systems and the general public. In these efforts, it is estimated that about \$22,000 of federal "S&E" appropriations, in the form of manpower, facilities usage, and other support are provided to

carry out the programs successfully. For example, the FONZ provide volunteer guides to tour groups and large numbers of school children (about 17,000 in FY 1971). The Zoo provides training and informational guidance to help establish the proficiency of these volunteers. The FONZ conducts an active philanthropic campaign to help provide the Zoo with a variety of items such as ruffage and special food for the animals. The Zoo provides the use of offices to help in their educational endeavors. The FONZ stages special lecture programs for the community and metropolitan area. The Zoo provides space for these lectures (in 1971 the Elephant House was used for six lectures).

B. In addition to serving elementary and secondary school systems through scheduled guided tours, the Zoo is used in other ways. For example, on 72 occasions in FY 1971, the Zoo was called on to provide assistance to reporters, television personnel, photographers, and film crews, who were in the process of completing special educational projects. Several were for National Educational Television, or childrens topical programs such as Captain Kangaroo. Many high school students have access to Zoo training. For example, one student, sponsored by American Cancer Society, worked with our pathology laboratory. About seven others, through The Neighborhood Youth Corps' "In School-Out of School" program worked at the Zoo (about six hours a day) as trainees under various Zoo tradesmen. Federal "S&E" resources devoted to these activities amounted to about \$6,000 in FY 1971.

Federal Organizations and Agencies. The Zoo performs a number of services for a variety of federal organizations. The following are only representative examples of the types of activity recorded for FY 1971. Federal "S&E" costs associated with these are estimated at \$6,000 for the fiscal year.

A. Armed Forces Institute of Pathology; several veterinary trainees use facilities throughout the year to perform autopsies and receive training in anatomy and pathology of various animals. In return, about 90% of the gross autopsy work necessary for the Zoo's operations is performed by these trainees.

B. Environmental Protection Agency; use of office space and consultation with Zoo staff to begin a pilot program using 10 Urban Corps students stationed at Zoo exhibits to discuss with visitors various problems of conservation.

C. Fish and Wildlife Service; frequent information and consultation relating to conservation of animals, particularly to administration of the Endangered Species Act.

D. National Institute of Mental Health; use of fenced enclosure on Zoo grounds for project involving the tracking of raccoons in their natural environment.

E. Other; including Bureau of Standards, National Arboretum, and various federal pathological and veterinary labs. The Zoo frequently loans special equipment for grounds maintenance, and provides biological specimens to various federal laboratories for research.

RADIATION BIOLOGY LABORATORY

The efforts of the Laboratory are directed at explaining the influences of the various factors in the environment--light, temperature, humidity, and atmospheric content--on the growth and development cycles of plants and to characterize the mechanisms through which environmental signals eventually manifest their effects on the developmental processes in living organisms. This is accomplished by studying various problems in the Laboratory under controlled conditions using biochemical, biophysical, and physiological techniques and then verifying the importance of these processes in nature by monitoring the natural, dynamic environment.

The Laboratory is a recognized leader by biologists in the study of photobiology, and the development of sophisticated instruments for research on plant growth. Through these activities, the Laboratory provides the scientific community with a variety of services which affect the advancement of biological knowledge and the well-being of the general public. The following examples describe specific services provided in FY 1971, but represent only a partial listing of activity. The dollar costs (totaling \$40,000) are only approximations.

Instrumentation Services to Research Institutes, Universities, and Museums. Each year the Laboratory receives a number of requests for instrumentation services (calibration, adjustment, or consulting or instrumentation techniques, etc.) from various organizations. The cost of providing these services required in FY 1971 is approximately \$2,000 of federal "S&E". Examples would include:

A. Eppley Laboratories; information and instrumentation assistance.

B. National Oceanic and Atmospheric Administration; information on solar spectral distribution.

C. University of California; spectral data and instrumentation.

D. Cold Regions Research and Engineering Laboratories, and the Desert Research Institute; solar spectral distribution of Point Barrow, Alaska.

E. National Aeronautics and Space Administration; spectral data and instrumentation.

F. U.S. Congress, SST study, spectral data.

G. Davos Observatory (Switzerland); Instrumentation assistance.

H. Commonwealth Scientific and Industrial Research Organization, (Australia); instrumentation assistance.

Graduate Education and Training. These activities, although partly covered by grants, drew about \$4,000 of federal appropriations in FY 1971. Examples would include:

A. Provided graduate education in special areas of biology to 120 students registered for credit in the Consortium of Washington Metropolitan Area Universities.

B. Provided the North Atlantic Treaty Organization lectures on Phytochrome analysis at the University of Athens, Greece.

Research Collaboration, Review, and Conservation. "S&E" costs associated with these activities were approximately \$14,000. Examples would include:

A. All senior staff members regularly reviewed proposals to NSF, NIH, AEC and other agencies for various colleagues and organizations. Also, about a dozen consultations from various universities drew significant time and resources of the Laboratory last year. Inquiries for information and published work on the Laboratory required considerable mailing. The Laboratory provided numerous electron micrographs of ongoing work to major publishers for textbook illustrations.

B. The Laboratory frequently advised and collaborated with other organizations on their basic research problems. For example, cooperative phytochrome research with the University of Freiburg. Also, the Laboratory assayed, by electron microscopy, blue green algal samples for virus

infection for the University of Delaware. Some additional research services were provided to the biological laboratories of the New York State Department of Health, and Harvard and Yale Universities.

C. The ongoing solar radiation program has produced the only long-term data on ultraviolet light measurements. This information was used during the recent Congressional review of the impact of the SST program on the environment.

Carbon Dating Services Provided to Colleges, Universities, Museums. Total federal resources devoted to these services are estimated at \$20,000. Examples are:

A. Over 150 samples taken from archeological finds were carbon-14 dated in FY 1971. Much of the material was part of the ongoing research efforts between National Museum of Natural History investigators and various University scientists.

B. The Laboratory dated the first series of sedimentologic samples from Godin Tepe, Northwest Iran. This project involves McGill University, the Royal Ontario Museum, and the University of Minnesota. They are trying to identify the classic sequence for cultural paleoclimatic change in the Near East over the past 40,000 years.

SMITHSONIAN ASTROPHYSICAL OBSERVATORY (SAO)

Basic research, as in some other areas of Institutional operations such as the Radiation Biology Laboratory and the Tropical Research Institute, is the primary focus of the Observatory's efforts. Services provided to specific organizations and the general public are generated as by-products from the scientist's research activity. As such, their impact and the benefits derived are difficult to measure, but their importance cannot be underestimated for the continued advancement of the well-being of man.

The Observatory is internationally regarded as one of the foremost leaders in many areas of astronomical research and provides the basic measurements and reference works (Smithsonian Standard Earth, Star Catalogue, Star Atlas) for investigations of the universe. Currently about fifty professional staff scientists are engaged in many major projects pertaining to investigations of the earth as a planet, the solar system, and energetic phenomena in the universe. Many of these studies are being conducted in collaboration with professionals from other observatories.

Some specific ways the Observatory served the scientific community, graduate students, and other social groups in fiscal year 1971 are described below. The approximate cost of supplying these services from federal appropriations was \$97,000.

A. In cooperation with the Harvard College Observatory, SAO conducted a series of visitors' nights when the public was invited to tour the Cambridge facilities, hear talks on astronomy, and look through the telescopes. Similar activity is conducted several times a year at the Tucson, Arizona, installation.

B. About 25 eminent scientists from foreign and U.S. observatories were invited to Cambridge for one of five days each to discuss their work and to present a formal lecture.

C. The Observatory supervised and supported two postdoctoral fellowships and about ten graduate assistants at institutions such as Harvard, MIT, and Brandeis, and about twelve college summer student assistants. In addition, staff based at or visiting SAO's observing sites lectured and conducted classes at local schools, colleges and universities: e.g. Havana, Illinois; Urbana, Illinois; Organ Pass, New Mexico; Tucson, Arizona; and various locations in Hawaii, Greece, Ethiopia, Brazil, Japan, Australia, India, Peru, Spain, and South Africa.

SMITHSONIAN OCEANOGRAPHIC SORTING CENTER

The Smithsonian Oceanographic Sorting Center, located in the Washington Navy Yard with a second unit in Carthage, Tunisia, coordinates collections of marine specimens gathered by governmental and non-governmental scientists and insures that collections are processed for the benefit of science.

The Smithsonian receives a substantial portion of the marine specimens gathered by some eighty United States vessels engaged in part- or full-time oceanographic research. Also, as the repository for collections made with federal funds, the Smithsonian receives specimens from the Coast Guard, the National Science Foundation, the Geological Survey, the Bureau of Sport Fisheries and Wildlife, the Navy Department, the Army Coastal Engineering Research Center, the Atomic Energy Commission, the Public Health Service, the Department of State, and other agencies and universities.

Center specialists sort out the specimens, identify and inventory them, label them with the proper environmental data, and store them in preservatives. They are then shipped to scientists around the world

for research in population distribution and interrelationships of marine organisms. Geological specimens are processed in a similar manner. To date, more than twenty-five million specimens have been sorted by the Centers and nearly ten million of these have been shipped to specialists for study.

In FY 1971, approximately \$370,000 of federal "S&E" resources were devoted to the Washington based sorting activities. The Tunisian branch is funded through excess foreign currency. During the year the Smithsonian Oceanographic Sorting Center sent 219,708 specimens of algae, invertebrates, vertebrates, oceanic rocks, and photographs of the ocean bottom to 368 scientists for studies of the kinds, distributions, and populations of organisms of the world ocean. At the request of national and international organizations, supervisors were sent to the Antarctic, the Pacific coast of Colombia, Staten Island, the Galapagos Islands, Panama, and many other localities to make collections or to obtain records of collections of scientific interest.

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

The Smithsonian Tropical Research Institute (STRI) in Panama is a research organization devoted to the study and support of tropical biology, education, and conservation. Its research focuses broadly on the evolution of patterns of animal behavior and ecological adaptations. The tropics are a natural laboratory for these purposes. Panama further offers unique zoogeographic characteristics. It is a land bridge to terrestrial life forms of two continents and a water barrier to marine life of two oceans. In addition to furthering its own research, the Institute serves as a major center for visiting scientists and advanced students, from many countries, researching the competitive processes and interactions of tropical biota. Its responsibilities include the operation of Barro Colorado Island, a forest research preserve in Gatun Lake. The Island provides an undisturbed environmental laboratory for field studies on fundamental biological problems.

Specific services provided to various customers in FY 1971 are numerous. The following list by no means is complete, but is representative of the extent and scope of utilization of the expertise and facilities of the Institute. Federal resources associated with the provision of these services approximate \$162,000. In FY 1971, about 800 persons from 55 universities, 47 other institutions, in 24 states and 20 countries went to STRI to conduct their various research projects. Examples of support provided, and associated costs, are as follows:

- A. Maintaining the Barrow Colorado Laboratory offices, lodging and food services, providing for the preservation and protection of the wildlife, and

maintaining transportation services to and from the Island, required approximately \$27 per scientific day; receipts were about \$6 per day. The Institute utilized about \$126,000 of its Federal resources to maintain the Island's services.

B. Use of other laboratory space, office space, and equipment (exclusive of the Barro Colorado Island preserve) required approximately \$36,000 of federal appropriations. The Institute frequently makes its library resources available to a number of users including the Gorgas Memorial Laboratory and Library, The Tropic Test Center, The Middle America Research Unit, The Canal Zone Library, various universities (such as the University of Panama and the Canal Zone branch of Florida State University) and others. As another example, the University of Panama frequently uses the Institute's vessels for research.

C. The professional scientific staff of the Institute, about a dozen, are utilized heavily in consultative work by the visiting researchers and local organizations. There is no way to compute these costs, but the Smithsonian feels the scientific interchange is necessary and of utmost benefit for the advancement of good international science relations. Four times a year the Institute conducts a lecture for Navy physicians on dangerous marine mammals. It also periodically conducts guided tours for such organizations as the Canal Zone College, the public schools, and the Panamanian private schools. It provides frequent scientific consultation when called upon to the Panama Canal Water Quality Laboratory, the Public Health Department, the Army Sanitary Engineers, the Gorgas Memorial Laboratory, and the Middle America Research Unit.

HISTORY AND ART

ARCHIVES OF AMERICAN ART

The Archives of American Art is a relatively new operating unit of the Smithsonian, becoming a part of the Institution in May of 1970. It is filling a particular informational responsibility in art research across the country by serving as a central depository for organizing, preserving, and making accessible the primary documentation--photographs, diaries, correspondence and notes--needed by art historians in their work. This is a function which has long been in demand and as a result of the high level of professional and public interest, the Archives finds itself devoting most of its base federal "S&E" resources, and a great deal of time and effort, to responding to inquiries and providing informational guidance to users. Cost estimates have not been made, but the burden is substantial since the primary mission of the Archives is to provide information services to its many and varied customers. Federal "S&E" appropriations amounted to \$175,000 in FY 1971.

To illustrate the extent of activity during FY 1971, 310 researchers from the United States and foreign countries utilized the Archives' holdings at its branch offices in Boston, Detroit, New York, and Washington. These scholars represented about 100 museums, colleges, historical societies, publishers, dealers and other institutions. In addition, specialized materials were loaned to 34 academic institutions in various parts of the country for extensive research.

Thousands of reference inquiries, by mail and by phone, ranging from routine requests to factual and intensive search problems, were answered by the Archives staff. An examination of 434 mail inquiries was conducted and is representative of the diversity of the Archives' audience. The inquiries came from 130 universities, museums, and other institutions located in 32 states and foreign countries.

FREER GALLERY OF ART

The Freer Gallery of Art houses one of the world's most distinguished collections of oriental art; about 10,000 works of art from China, Japan, Korea, India, and the Near East, are included. The Gallery's two-fold program involves the continuing search for works of the highest quality that may be added to the collections for exhibit purposes, and the continuing study of these works of art as keys to understanding the civilizations that produced them.

Aside from its public exhibition responsibilities, services usually take the form of curatorial guidance and expertise provided to the general public and scholars of far eastern art. It maintains a

laboratory which is in the forefront of identification, conservation and preservation of delicate oriental objects and paintings. Gallery facilities, collections, and staff are frequently utilized by the general public for routine identification services, and by professionals seeking help on specific and highly technical research and conservation problems. In addition, the library of 40,000 volumes is available and used extensively by the numerous visiting scholars and students.

Federal "S&E" resources associated specifically with the provision of services to various organizations, institutions, and individuals are not available but probably represent around 5% (or \$3,000 in fiscal year 1971) of the Gallery's base federal operations. Most of the Freer Gallery operations are funded from private income, and in fiscal year 1971 private expenses approximated \$967,000.

HIRSHHORN MUSEUM AND SCULPTURE GARDEN

The Hirshhorn Museum and Sculpture Garden, now under construction on the Mall, will house a magnificent gift to the nation of more than 7,000 paintings and sculptures. The world-renowned sculptures in the collection range historically from antiquity to the present. The depth of representation of major sculptors of the nineteenth and twentieth centuries is unique. The paintings in the collection are primarily twentieth century. Beginning with such precursors as Thomas Eakins and Winslow Homer, the course of American painting is extensively covered. Complementing the American section is a strong group of significant European paintings of the past three decades. The Museum's collections are a major research and exhibit resource in the field of modern art.

The Hirshhorn Museum and Sculpture Garden is in the early stages of operational growth. The new Mall Museum is expected to be open in the fall of 1973. Operating headquarters are currently in New York City. Services provided in fiscal year 1971 largely were tours of the collection, loans to individuals and organizations for research purposes, provision of photographic materials and other documentation on the collections, and counseling and guidance to various scholars and professionals doing independent research on various parts of the collections.

In fiscal year 1971 representatives from about 294 organizations were provided some service in these areas. Estimates of federal effort related to the provision of services exceed \$7,000. Services to type of governmental unit or private organization are not readily available, but the major portion of effort was directed to academic institutions, art museums and galleries across the nation. A breakdown of total services provided follows:

	<u>Number of Organizations</u>	<u>Approximate "S&E" Cost</u>
Tours	17	Not available
Loans	36	3,100
Photographs	118	1,300
Research guidance	<u>123</u>	<u>2,600</u>
Total	294	\$7,000

As Museum operations grow it is anticipated that public demands for curatorial and other art related assistance also will increase.

NATIONAL ARMED FORCES MUSEUM ADVISORY BOARD

The National Armed Forces Museum Advisory Board's principal work is to advise and assist the Board of Regents on matters relating to the establishment of a National Historical Museum Park to be known as the Bicentennial Outdoor Museum, and a study center, to be designated as the Dwight D. Eisenhower Institute for Historical Research.

In pursuing these efforts, the Board provided a small amount of specific services to federal agencies and other organizations during FY 1971. Service efforts consisted largely of providing informational materials, research advice, loans of collections, and assistance in preparation of specialized brochures for a variety of museums, Federal agencies, and other organizations. It is estimated that these services required about \$4,000 of time, effort, and other resources in the FY 1971 base "S&E" appropriation. Examples of recipients and services provided would include:

A. Federal Agencies. The National Archives, National Park Service, the Army Chief of Military History, and the Coast Guard were provided with informational materials, research guidance and expertise. In addition, assistance in preparing exhibit and collection brochures was extended to the Chief of Naval Operations, and the Marine Corps Museum.

B. Other Organizations. Informational materials, research guidance, and collections expertise were provided to such groups as the American Legion, Boys Scouts of America, Kentucky State Department of Parks, and the Missouri Historical Society.

NATIONAL COLLECTIONS OF FINE ARTS

The National Collection of Fine Arts (NCFA), the oldest national collection of art, is devoted to the conservation, study, and presentation

of American painting, sculpture, prints and drawings, and American design and crafts. It circulates exhibitions both throughout this country and abroad (in association with the United States Information Agency), maintains an active program of public education at all levels, engages in research and publication on American artists, and maintains (with the National Portrait Gallery) a library and a laboratory for conservation and conservation research in American painting.

The services it provides to federal and private organizations, as well as the general public, go beyond the partial listing described below. But the listing is representative of the scope and extent of utilization of the NCFAs expertise and facilities. In FY 1971, specific services, in the form of special tours, loans of collections, provision of educational and informational material, and staff consultation on objects and exhibits roughly amounted to an estimated \$39,000 of the federal appropriations base.

Government Organizations. About \$8,000 in services were provided to:

A. Federal Agencies. As examples, the NCFAs provided technical guidance, exhibits production assistance, and curatorial expertise to the State Department and the USIA regarding international exhibitions and other cultural events.

B. U.S. Congress. During the course of the year the NCFAs answered several inquiries from various Congressional offices regarding the collections and their use; the origin and authenticity of various paintings, and the state of American art in general. The effort to answer these inquiries varied from brief informational responses to detailed search and verification procedures.

C. State and Local Governments. Formal educational tours were provided to about 12,000 elementary and secondary school students from surrounding school systems.

Colleges, Museums, and Other Educational Institutions. About \$20,000 of services were provided for the following:

A. The NCFAs provided loans of collections, curatorial assistance, supervision of student research and technical expertise on exhibiting and conservation, to about 40 academic institutions in this country and abroad. Institutional examples would include the Universities of Michigan, New Mexico, Delaware and Maryland; Duke, Howard, George Washington, Wayne State, and Syracuse Universities; as well as Earlham and Hollins Colleges.

B. About 30 to 40 museums and art institutions were represented by people utilizing the staff expertise, collections, and reference information of the NCFA in FY 1971. In addition to local installations, included were the Wallraf-Richartz Museum in Germany, the Art Institute of Chicago, and the Peoples Gallery in California.

Commercial Organizations, Private Industry, and Other. Services, amounting to approximately \$11,000 of federal "S&E" resources, took the form of filling requests for catalogs, photographs, or other information such as identification of paintings, and location of American paintings or artists. Examples of firms involved would be Richard Abel and Company, World-wide Book Incorporated, and several major publishing companies. Also included would be several organized tours for various business groups along with the related distribution of reproductions, slides, other free publications and materials prepared on the collections. Included here is a portion of the estimated library costs, shared with the National Portrait Gallery, associated with outside users, and the time and effort to respond to general public inquiries regarding the collections, conservation problems, or historical facts associated with the NCFA holdings.

NATIONAL MUSEUM OF HISTORY AND TECHNOLOGY

The National Museum of History and Technology (NMHT) occupies a unique position among the great museums of the world. As the repository of the National Collections documenting the historical and technological achievements of the American people, the Museum has responsibility for over 16 million objects related to all facets of the American experience. As in the case of the National Museum of Natural History, a great deal of the responsibilities and services provided to the general public is encompassed in the care and exhibiting of the collections. The NMHT is the most visited museum in the world. It was host to almost 6 million visitors during FY 1971. But the Museum's services do not stop with these functions. As a center for the scholarly study of the history of American civilization and the history of science and technology, this Museum continues to support and encourage basic research and publication in many subject fields, ranging from early exploration to studies of contemporary American culture. Its professional staff is consulted frequently on matters of history, government policy, and technological development.

In addition, because of its reputation, location, and unique facilities, the Museum is utilized for a variety of high level meetings, dinners, and receptions by agencies of the federal government, foreign governments and private organizations.

A complete itemization of specific ways the Museum services general public demands, or responds to the needs of particular federal agencies, academic institutions, or private organizations is beyond the scope of this summary. The same is true of providing estimates regarding the annual draw against federal resources associated with these responsibilities. Base "S & E" appropriations in FY 1971 were \$2,242,000, and it is estimated that no less than \$200,000 can be identified as directly related to the types of services described below.

Federal Agencies & Organizations. As regards the provision of curatorial expertise some of the major examples would include:

- A. Department of Defense; provided naval history research collaboration, including the provision of ship data, documentation on vessel acquisition, and related information.
- B. Federal Bureau of Investigation; provided expertise, identification, and guidance related to numismatic and philatelic investigation.
- C. Maritime Administration; provided consultation on ship models and history; also advised on personnel and other recommendations for the Merchant Marine Academy.
- D. National Science Foundation; organized and taught a six week summer institute on the history of technology given to 15 engineering professors. (NSF covered stipends and travel of participants; Museum staff time and facilities were contributed).
- E. Treasury Department; provided consultation on possible firearms control legislation.

The reception halls and auditoriums are usually provided on a minimum rental basis covering only Institutional costs of maintenance, but frequently no charge is made because of the nature of the meeting. A partial listing of the special events conducted in the building during FY 1971 includes:

- A. White House functions such as; the special exhibit and reception "The President in Focus: A Photographic Impression of the First Two Nixon Years;" the honoring of recipients of the President's Medal of Science winners; and the hosting of various international functions.
- B. Federal Agency events such as; Department of Commerce three day training for contract specialists on federal equal employment opportunity; graduation of special agents for Bureau of Narcotics and Dangerous Drugs; honoring of Presidential Scholars by the Office of Education.

Universities, Museums, Business, Other Government and Private Organizations. Examples of services provided in FY 1971 would include:

- A. Boy Scouts of America; provided consultation and information of military and political history of the United States.
- B. Chesapeake Bay Museum, Fall River Museum, California Museum of the Sea, and National Trust for Historic Preservation; provided information concerning industrial development and history of marine and land transportation.
- C. Foreign and Other Governments (including Denmark, Finland, Iceland, Mexico, Norway, Sweden); arranged and mounted various joint exhibitions on postal history, stamps, and other subjects. Museum facilities were utilized for high level meetings by such groups as the Organization of American States, the Inter-American Defense Board, the Economic Development Administration, and the Department of Human Resources (D.C.).
- D. National Geographic Association, American Pharmaceutical Association, British Broadcasting Company; provided information, collections, identifications, conservation procedures, and formal instructions on the history of science and technology.
- E. Other; Senior scholars, students, various publishers and state historical societies utilized the Washington based collections and staff expertise frequently during the course of the year. In addition there were many thousands of inquiries from the general public involving identification or other services.

NATIONAL PORTRAIT GALLERY

The National Portrait Gallery (NPG) is devoted to the acquisition, conservation, study and exhibition of portraits of the men and women who helped to make American history. By various efforts the Gallery attempts to present to the general public a sense of the human elements involved in the historical development of this country. Through the expansion and care of the collections, education programs, exhibitions, research and publication, the Gallery generates a variety of services to the general public and specific governmental, business, and academic organizations.

The listing below is not complete, and the estimates of associated costs are only representative. But the scope and extent of services provided are contained within the descriptions. In FY 1971, the Gallery provided about \$35,000 of various services to educational institutions, museums, private organizations, and government agencies. About \$2,000 was related to use of the meeting rooms and other facilities, approximately \$23,000 represents support given in the form of collections loans, informational materials and other services; and some \$10,000 of services were provided in the form of curatorial guidance, counseling, and expertise. Major recipients of these services include the following:

Government Organizations

A. U.S. Supreme Court. A considerable amount of time was spent in locating portraits of former Supreme Court Justices and advising on their display in the court building. This involved several counseling sessions, advice on artists who could copy original (but unavailable) portraits, exhibits sketching, design, and technical on-site assistance.

B. U.S. Congress Information Agency, National Archives, Departments of Defense, Interior, Treasury, the Library of Congress, White House Curatorial Staff, and others. Much use was made of the NPG staff, particularly in searching the catalog of American portraits and providing transparencies, slides, photographs, and other informational resources regarding portraits of famous Americans. The groups listed represent only the heaviest federal government users, but some contact was recorded with virtually every agency in the federal complex during FY 1971.

C. State and Local Governments. Formal educational tours were provided to about 5,000 elementary and secondary school students from surrounding school systems.

Colleges, Museums and Other Educational Institutions.

A. Individuals representing approximately 30 academic institutions in this country and abroad relied on the NPG to provide extensive loans of collections, locate or classify portraits, or provide photographs and other information on portraits. Institutional examples would be Florida State University, Kent State University, Stanford University, Yale University, and the University of Tennessee. Foreign institutions which requested some form of service were the University of Sussex, England, Dokkyo University, Japan, University of Ottawa, Canada.

B. About 20 museums frequently utilized the facilities, staff expertise, collections, and reference information related to American portraiture. Some of these include the Museum of African Art (D. C.) the Jersey State Museum, the Louisiana State Museum, the Tennessee Fine Arts Center, and the Winterthur Museum. In the case of the Museum of African Art, seven gallery areas, some office and storage space, were made available over a six-month period for a temporary show of African Art during a period when that museum was closed for renovation.

Commercial Organizations and Private Industry. Services to these organizations chiefly took the form of filling requests for catalogs, photographs, and other information such as identification of portraits, locating paintings of specific subjects or artists. Actual examples of firms would be Scott-Forsman Company, Stone and Adler Advertising Agency, the British Broadcasting Agency, and about 40 major publishing companies.

Other. Service examples would include organized tours for the general public, including the provision of free publications, reproductions, slides and other materials prepared on the collections. Also included are a shared portion (with the NCFA) of the estimated library costs associated with outside users, and the time and effort to respond to general public inquiries regarding the collections, conservation problems, or historical facts associated with gallery holdings.

SERVICES
of
OTHER MUSEUMS AND OFFICES

ACADEMIC AND EDUCATIONAL PROGRAMS

A major Smithsonian objective is to make Institutional resources for learning available to the formal educational community. The Office of Academic Studies and the Division of Elementary and Secondary Education provide coordination among the Museums and a central focus for services in this area of activity. Programs consist of the arranging and conducting of centralized tours of various museums and galleries by school children, the selection, granting, and administration of fellowships for post-doctoral and pre-doctoral candidates from various national and international institutions of higher learning, and the conducting of special seminars for the public. Federal appropriations for these activities in FY 1971 were \$596,000, and since the major efforts of the units mentioned were devoted to pursuing these activities the total amount can be considered as associated with the provision of these specialized services to specific audiences; i.e. to fellows from institutions of higher learning, to elementary and secondary school systems, or to the participants and public attendees of the seminars and special programs.

Institutions of Higher Learning. Since 1965 the Smithsonian has offered support under its programs in higher education to 93 Ph.D. candidates and 83 postdoctoral investigators to enhance their ability as scholars and teachers through collaboration and study with the Institution's research staff. Over 50 undergraduate and first- and second-year graduate students have been offered the opportunity to consult the Institution's research staff and collections for short periods. In FY 1971, about 25 post-doctoral and 14 pre-doctoral students were brought to the Institution to complete their work. Their areas of work coincide with Institutional research interests; e.g. systematic biology, taxonomy astronomy and astrophysics, tropical biology, American historical development and the conservation and preservation of antiquities. Among Institutions represented by fellows are Auburn University, the University of Pittsburgh, and Case Western Reserve University. Approximately \$440,000 of federal appropriations were devoted to the program in FY 1971.

Elementary and Secondary School Systems. About 85,000 students, mostly from Maryland, Virginia, and the District of Columbia participated in supervised school tours of the various museums, galleries, and the National Zoo in FY 1971. These tours are structured to fit the educational and curricular interests of the pupils and teachers. Classroom materials have been developed around the tours and are used as part of the childrens regular school learning program. In addition, associated projects and lectures are conducted in the Institution's auditoriums and galleries. Special workshops are held periodically (folk musical instruments, Museum Education Day, visits to scientific laboratories etc.). to supplement the regular tour program. Volunteer high school students (trained through the docents program) extend these services to uncounted numbers of visitors to the Mall in the summer months. Approximately \$138,000 of federal appropriations were devoted to these services.

Public Seminars. The major event in FY 1971 was the fourth in the series of International Symposia, and was devoted to "The Cultural Drama: Interpretations of Protest and Change". Widespread publicity was given to these meetings, and participants included Messrs. Saul Alinsky, Conor Cruise O'Brien, and Kenneth Clark. Approximately \$18,000 of federal appropriations were directed to these services in FY 1971.

ANACOSTIA NEIGHBORHOOD MUSEUM

The Anacostia Neighborhood Museum was established to reach out to new audiences who are unaware of museum resources, physically too far from them, or, as inhabitants of low-income population density centers, do not see the interest or relevance of museums. Starting in 1966, the Smithsonian sought out community reaction to the concept of a permanent neighborhood museum in the inner city. Reaction was most favorable and the desire for community involvement appeared strongest in Anacostia. Since its inception, the Museum has linked its activities directly to the needs of the community and has assured a fresh, nontraditional approach to the role of the museum. Activities are directed primarily at servicing the expanding cultural needs of the black and underprivileged residents of the inner city. The Museum's activities are funded by a combination of gifts and grants from foundations, and federal appropriations. Most of the federal funding (\$151,000 in FY 1971) is used in the exhibits efforts, the production of educational programs related to the exhibits process, and Museum administration. The foundation funding (\$115,000 in FY 1971) is utilized to carry out special research and community projects. Both sources of funding promote the primary objectives of advancing man's knowledge and understanding of various life styles, and of the need to find neighborhood solutions to common social problems facing various ethnic groups in urban populations. The Museum provides an important focus for these activities in the Washington Area.

Several examples of service can be cited for FY 1971:

A. The story of black Americans, both slaves and free men who fought in the War for Independence, was retold in the Anacostia Neighborhood Museum's exhibit "Black Patriots of the American Revolution". Over 3,000 booklets describing the exhibit in story form for children were distributed to school tour groups and in response to requests from teachers and parents.

B. The Museum and the Lorton Reformatory cooperated in a presentation of visual and dramatic arts done entirely by the men from Lorton who worked along with the exhibits staff in mounting their own paintings and handicrafts. Research for "Lorton Reformatory: Beyond Time" was undertaken during several staff visits to the prison.

C. The Mobile Division offered a bussing program which takes mini-editions of current exhibits to inner-city playgrounds and churches in summer and schools in winter. Another project provided teachers with a portable library of Afro-American books, shoebox specimens, and puzzle maps on such subjects as black scientists and places to visit in Washington of interest to black Americans. The Speakers Bureau offers a list of lecturers on various subjects who are available to schools and community groups.

D. The Center for Anacostia Studies, operating under a grant from the Carnegie Corporation, conducted an opinion survey at the request of the Museum's Neighborhood Advisory Committee, which disclosed that crime, drugs, housing, unemployment, and education were prime concerns. Interviews with long-time residents have been completed in preparation for an oral history of Anacostia and an exhibit.

DIVISION OF PERFORMING ARTS

The Division's principal mission is to serve the Institution through public presentations related to arts, crafts, and folk traditions unique to the historical development of the Nation. It does this in a variety of ways, the annual folklife festival on the Mall, partial sponsorship of the college drama festival, arranging and supervising the puppet theatre, and cultivating relationships with state governments, federal agencies, and national ethnic groups to participate in the various programs. Estimates of federal time and effort directed toward providing services to governmental or other specific groups and organizations are not available, but consume virtually all of the Division's federal operating resources. In FY 1971, federal appropriations were \$215,000. A list of federal and other governmental organizations which were heavily involved in the activities for FY 1971, along with some idea of assistance rendered, follows:

A. Department of Labor, along with the AFL-CIO; these groups worked closely with the Division in producing the summer 1971 folklife festival. They provided staff time, funding, and information in developing background material on cultural roots of the labor movement in America.

B. Department of Interior, including the National Park Service and Bureau of Indian Affairs (BIA), provided considerable support on the Folklife Festival and related activities. The Division assisted the BIA (through the Indian Awareness Program) with a variety of their educational activities.

C. Department of Commerce (U.S. Travel Service) supported the Montreal Project, which was a folk festival similar to the ones staged on the Mall. The Division also assisted the Commerce Department with the Discover America program.

D. Department of Health, Education, and Welfare. The Division indirectly supported such institutions as Bowie State College in the conduct and presentation of dramatic works.

E. Organization of American States; assistance, mainly advisory, on the problems relating to production in its performance program.

F. United States Information Agency; provided performance material and performers for use in their films, TV series, and radio programs.

INTERNATIONAL EXCHANGE SERVICE

Through the International Exchange Service, public and private institutions in the United States send their publications to organizations in other countries, and receive in exchange publications from the foreign organizations. Begun in 1849 as an exchange service between the Smithsonian Institution and the learned societies in other countries, the program was so successful that five years later it was expanded to other American organizations. When the Brussels Convention of 1886 was adopted by the United States the Smithsonian became the official exchange bureau in the United States for the international exchange of literary, scientific, and cultural publications. (14 Statute 573, as amended, provides that the exchange of official United States Government publications shall be made through the Smithsonian Institution).

The Exchange views part of its task as improving the world's libraries, and helping developing nations that are striving to build their educational systems and knowledge resources. Its entire federal budget (FY 1971; \$126,000) is directed at handling the publication transmissions, including postage and mailing. Transportation costs are paid from the Smithsonian Institution to the port of entry of the country where exchange bureaus are located. Where there are no exchange bureaus the packages of publications are mailed postage prepaid by the Smithsonian to the address of the intended recipient.

In FY 1971 approximately 350 domestic and foreign organizations used the Exchange, including the Library of Congress, the U.S. Patent Office, and various congressional committees. The heaviest users consistently are the nation's colleges and universities (particularly medical and dental schools), and scientific societies.

OFFICE OF EXHIBITS

The Office of Exhibits is a key unit in the process of communicating to the public the concepts, ideas and information that reside in the vast National Collections. It works in close collaboration with the scientists, curators and historians in developing, designing and producing exhibits for the millions of people a year who visit the Smithsonian museums. Last year well over 200 projects were completed. Since its inception in 1955, the Office has produced over 3,700 permanent exhibit units primarily in the National Museum of History and Technology and the National Museum of Natural History, and has produced hundreds of special exhibits in art, history, and science. The Office is visited by hundreds of museum professionals who come to study methods and procedures and to be trained in the many sophisticated exhibits techniques, some of which were initiated and developed by the Exhibits Office. Among these unique techniques are freeze-dry taxidermy, plastic reproductions and modelmaking executed to a high degree of excellence.

In the broadest sense, the entire federal appropriation of \$2,412,000 in FY 1971 can be considered as service oriented since it was directed to the production of exhibits for the benefit of the viewing public. In a narrower sense, perhaps \$60,000 can be associated with various services provided directly to specific private organizations, federal agencies, educational institutions, or individuals. The figure should not be considered precise, but the following partial list of activities is representative of the extent and scope of the Office's ability to respond to a variety of demands originating from outside the Institution.

Federal Agencies, State and Local Governments. Assistance was provided to several federal agencies in the mounting of specimens for research and exhibit, and in providing freeze-dry services. Offices and agencies included the Surgeon General, Walter Reed Institute of Research, the Army Institute of Pathology, the Central Intelligence Agency, the National Park Service, the Fish and Wildlife Service, the Federal Aviation Administration, the Federal Bureau of Investigation, the Geological Survey, and the Peace Corps. Similar services were provided to state organizations such as the Pennsylvania Fish Commission, Maryland State Parks Commission, and the District of Columbia Public Health Service.

The Office produced exhibit containers and tanks for the National Aquarium. This work was performed under contract (approximately \$5,500). Exclusive of the contract work for the National Aquarium, about \$15,000 of federal appropriations were devoted to services for governmental organizations.

Museum and Academic Institutions. Assistance in the form of freeze-dry services, specimen mounting, exhibit guidance and production was provided to organizations such as the Jewish Museum in New York, Johns Hopkins University, the University of Maryland, and Georgetown University. About \$45,000 of federal appropriations were directed to services for these and other museums and educational institutions.

C. Universities and other academic institutions; advised on research proposal preparation for foreign currency funding; located foreign research teams for cooperative projects with U.S. institutions; and assisted in securing foreign government approvals for cooperative research agreements.

OFFICE OF MUSEUM PROGRAMS

The Office of Museum Programs administers the National Museum Act, which makes funds available to museums and galleries across the nation for training of museum technicians, the development of educational programs, exhibit evaluation techniques, and community seminars. The Act was funded for the first time in FY 1972 and \$600,000 of federal appropriations will be utilized under the National Museum Act in these areas.

Prior to the Act's funding, the Office of Museum Programs supported some of these activities through its own federal base operations. In FY 1971, approximately \$70,000 were provided for training in exhibits techniques and production, and \$40,000 were devoted to support of national programs on various aspects of museum operations.

The training effort (\$70,000) involved a number of individuals from various colleges, museums, and high schools, and was conducted through the Institution's Office of Exhibits. Examples of organizations benefiting from these services would include trainees from:

- A. The African Art Museum, Washington, D. C.; training in silk screening, exhibits production, design and finishing techniques.
- B. Academy of Natural Sciences, Philadelphia; training in plastics shop.
- C. California Academy of Sciences, San Francisco; freeze-dry techniques and other laboratory training.
- D. Museum of Natural History, University of Iowa; exhibit design and production.
- E. High Schools; in cooperation with the George Washington University, about a dozen high school students with aspirations and talent in museum exhibits participated in the "Workshop for Careers in the Arts" program, which involved extensive training over a six to eight month period. The training covered all phases of exhibits design, production, and laboratory work. Pupils involved came from the District of Columbia and included representatives from Eastern, Western, Spingarn, and McKinley High Schools.

In addition, extensive training programs were conducted in exhibits design, production, and laboratory techniques. These programs were funded with approximately \$70,000 of federal funds provided by the Institution's Office of Museum Programs, and are described in that section of this report.

OFFICE OF INTERNATIONAL ACTIVITIES

The Office of International Activities is responsible for administering the Smithsonian Foreign Currency Program and coordinating the Institution's international cultural and scientific activities. It serves as the Institution's point of liaison with the Department of State, American embassies, research institutes abroad, and foreign diplomatic missions in Washington.

In carrying out its functions, in FY 1971 approximately \$32,000 of its base federal operations were devoted to providing services to international and national research sponsoring agencies, academic institutions, and governmental organizations. Examples of organizations to which services were provided are:

United States and Foreign Governments.

- A. Department of State; provided arrangements for foreign scholars and dignitaries visiting the Smithsonian.
- B. U.S. Information Agency; negotiated program coordinating art, exhibit, and other museum exchanges for USIA programs abroad.
- C. National Science Foundation; provided advice on setting up PL 480 grants program; organized visits by NSF sponsored foreign dignitaries to the Smithsonian.
- D. Indian and Other Embassies; preparation of Gandhi Centennial Exhibition, and other presentations.
- E. Foreign Research Sponsoring Agencies; located qualified U.S. research teams for overseas projects; assisted in proposal development for foreign currency funding.

Other Organizations.

- A. United Nations; arranged for visits by UN sponsored foreign nationals to the Smithsonian.
- B. Ford Foundation; arranged for visits by foundation sponsored foreign nationals to the Smithsonian.

In addition, the Office provided approximately \$40,000 in grants for services required in the general provision of advice and assistance on museum administration to the nation's museums, universities, state and local governments, national and international museum associations and historical societies. Examples of organizations and services provided in FY 1971 include:

- A. International Institute for Conservation; conservation seminar support.
- B. American Association of Museums; support for a major report on the finances of American museums and the analysis of accreditation issues.
- C. International Council of Museums, and the American Association of Museums; support and assistance involving a number of ICOM-US activities in the United States.

SMITHSONIAN INSTITUTION LIBRARIES

The Libraries provide the documentary information base and services that are required by, and contribute directly to, the exhibit and research programs of the various bureaus of the Institution. In addition, the Libraries are used heavily by people and organizations outside the Smithsonian. In FY 1971, approximately \$27,000 of central library services were provided from federal "S&E" appropriations to various outside users. Examples of these services would include:

- A. Lending Services. About 7,000 requests for books, periodicals and other information materials were filled. Most of these requests were generated by 450 institutions of higher learning, government agencies, or scientific institutes.
- B. Human Relations Area Files. The files are used chiefly by the Washington academic and governmental communities. The files are a cross-reference system for identifying and locating information on anthropological subject matter across cultural groups; e.g., comparisons of marriage rites of various American Indian tribes, or examination of herbs for their common medical use by African, Asiatic, and North American tribal groups. Resources for 1971 were devoted to maintenance and expansion of these files.
- C. Student Education. In FY 1971, the Libraries were used as a working laboratory by visiting researchers and college students studying library administration problems. They were analyzing methods of exchange, and reporting on effectiveness of material selection systems. The results were of benefit to the Libraries, but considerable staff time and resources were utilized to further the investigative efforts.

