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DEPARTMENT OF THE INTERIOR AND RELATED
AGENCIES APPROPRIATIONS FOR 1971

HEARINGS
BEFORE A
SUBCOMMITTEE OF THE
COMMITTEE ON APPROPRIATIONS
HOUSE OF REPRESENTATIVES
NINETY-FIRST CONGRESS
SECOND SESSION

SUBCOMMITTEE ON DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES

JULIA BUTLER HANSEN, Washington, *Chairman*

MICHAEL J. KIRWAN, Ohio
JOHN O. MARSH, Jr., Virginia
JOHN J. FLYNT, Jr., Georgia
DAVID R. OBEY, Wisconsin¹

BEN REIFEL, South Dakota
JOSEPH M. McDADE, Pennsylvania
WENDELL WYATT, Oregon

GEORGE E. EVANS, *Staff Assistant*

¹ Assigned to Subcommittee, February 20, 1970.

PART 4

RELATED AGENCIES:

American Revolution Bicentennial Commission
Commission of Fine Arts
Federal Field Committee for Development Planning
in Alaska
Forest Service
Indian Claims Commission
Indian Health Services and Facilities
National Capital Planning Commission
National Council on Indian Opportunity
National Foundation on the Arts and the Humanities
National Gallery of Art
Public Land Law Review Commission
✓ Smithsonian Institution p 750



Mr. REIFEL. We certainly do.

That is one of the things I am looking forward to with great pleasure. Mrs. Reifel and I are going to spend a year here in Washington after my retirement at the close of this session. Going to the National Gallery of Art and Smithsonian Institution at a leisurely pace are two of the pleasures which we are looking forward. Tell us about the times of the showing of "Civilization."

Mr. BROWN. It will be the end of June, I think, when the first series—

Mr. REIFEL. Do they run one day following another?

Mr. BROWN. No; they run a week each, so we are now on No. 3 out of the 13, and, if you got in now, you really would have missed very little because they are not interdependent. They are designed so they stand each one on its own. If you would like, we would be happy to reserve a seat for you any time you call in. Just let us know.

Mr. REIFEL. That is very nice of you. I think maybe if I don't get to it this year, you are going to have them there next year, are you not?

Mr. BROWN. Hopefully.

Mr. REIFEL. So I will have plenty of time and can stand in line. Thank you so very much for your leadership.

Mr. BROWN. Thank you.

Mr. REIFEL. I was interested in seeing Pietà—if that is the way you pronounce it—not the painting but the sculpture at the New York World's Fair, but it was behind a bulletproof glass. There is quite a difference to see it without any obstruction.

Mrs. HANSEN. When my mother was living, she was an amateur artist. She and my son went every Sunday to the gallery. They did a certain part of the gallery every Sunday.

Mr. BROWN. That is the way to do it.

Mr. REIFEL. This is off the record.

(Discussion off the record.)

Mrs. HANSEN. Thank you so much.

Mr. BROWN. Thank you, Madam Chairman.

FRIDAY, APRIL 10, 1970.

SMITHSONIAN INSTITUTION

WITNESSES

S. DILLON RIPLEY, SECRETARY

JAMES BRADLEY, ASSISTANT SECRETARY

SIDNEY R. GALLER, ASSISTANT SECRETARY (SCIENCE)

CHARLES BLITZER, ASSISTANT SECRETARY (HISTORY AND ART)

WILLIAM W. WARNER, ACTING ASSISTANT SECRETARY (PUBLIC SERVICE)

THEODORE H. REED, DIRECTOR, NATIONAL ZOOLOGICAL PARK

Mrs. HANSEN. The committee will come to order. We now have the Smithsonian Institution. We are very happy to welcome the principal witness, Dr. S. Dillon Ripley, Secretary. Please insert your general statement in the record and summarize it for us.

Dr. RIPLEY. Thank you very much, Madam Chairman.

GENERAL STATEMENT

I will place my statement in the record, and I will briefly highlight it.

(The statement follows:)

STATEMENT OF DR. S. DILLON RIPLEY

Mr. Chairman and members of the committee. Once again, I welcome the opportunity to appear before this committee. This is the sixth time that I have been privileged to present the Smithsonian Institution's program. I have come to view these presentations as a sharing of information and accomplishments with a committee whose interest, involvement, and support has been of primary importance to the Smithsonian. I realize, however, that our concerns are only a part of your committee's larger responsibilities to the American public, to many of the goals and aspirations of the Nation itself, and to a measured assessment of funding in proportion to available fiscal resources.

NOTABLE EVENTS

During this past year, there have been a number of notable Smithsonian events and developments which I would like to share with you.

Visitor attendance climbed to almost 12,500,000 in calendar year 1969 reflecting a return to more orderly conditions in the Washington, D.C., area. About 750,000 of these persons came to see the lunar rock sample from Apollo 11, first displayed in September. An additional 75,000 persons visited the Anacostia Neighborhood Museum and 5 million came to the National Zoological Park, a larger figure by far than any other zoo in this country. There is every reason to believe that this participation in our activities will continue to climb, especially as the period of the Bicentennial of the American Revolution approaches. The Institution will be provided with an unrivaled opportunity to play a major role in public education and the assessment of national objectives. An important corollary is a pattern of increased public and scholarly visitors as many programs enacted by the Congress come into being. This trend is apparent over the past 5 years and will continue as the Smithsonian brings to the public the tremendous heritage of our Nation in a variety of educational forms. In this connection, the National Museum of History and Technology (where we hope to center our bicentennial activities) has just had its 30 millionth visitor since opening in 1964, surely a world's record for museum attendance.

I am pleased to report that the construction of the Joseph H. Hirshhorn Museum and Sculpture Garden is about to begin. Groundbreaking will take place in late March or early April. The committee will share our pleasure and pride that the American public is now assured access to this important collection of paintings and sculpture in a major new museum taking its place on the Mall along with the greatest collections of national treasures assembled by any country.

The Radiation Biology Laboratory has substantially completed its relocation from the basement of the original Smithsonian building to a modern laboratory building in Rockville, Md. It is anticipated that by midsummer the Laboratory's research activities can be substantially resumed.

The Renwick Gallery of Art has been turned over to the Smithsonian by the contractor. While considerable basic restoration and renovation work still remains to be done and must be funded, the Institution has proceeded with the development of plans for the building's use as a showcase of important Americana. We are aiming for a partial opening of the building early in calendar year 1971, with a full opening sometime thereafter when restoration work is completed.

The President has requested that the Smithsonian assume responsibility for the operating budget of the National Zoological Park, previously funded in the District of Columbia budget. Although we are very much aware of the potential financial impact on this committee's Appropriation Act, we believe this transfer reflects the fact that the zoo is a national zoo, established by an Act of Congress in 1890. Approximately 85 percent of its visitors come from outside the District of Columbia. As such, the operations of the National Zoo should be budgeted and presented as are the other national museums under the jurisdiction of the Smithsonian and this committee.

Throughout the Smithsonian's scientific activities there is an intensified involvement in basic studies and research support of direct relevance to man's relationship to and dependence on his natural surroundings. These efforts include the Astrophysical Observatory's investigations of the upper atmosphere and its relationship to atmospheric events. Its Orbiting Astronomical Observatory continues to provide scientific data heretofore never obtained. The National Museum of Natural History's capability to identify biological indicators of environmental change is of increased significance. The Radiation Biology Laboratory's unique determination of an apparent 16-percent decrease in the solar energy reaching the earth here in Washington, if representative of a worldwide condition, may have considerable importance to studies of crop and food production and to man's life in cities. Environmental studies at the Chesapeake Bay Center are beginning to establish baselines for biological prediction. Comparative evolutionary biology and behavioral relationships as well as oil-spill research are being emphasized by the Smithsonian Tropical Research Institute. The coordinated study of the physical and cultural development of man is underway in a number of our museum and research groups in the National Museum of History and Technology, the Center for the Study of Man, and elsewhere.

In this regard, let me mention our third international symposium, this one on recent advances in the understanding of social behavior of higher animals with the goal of improving our understanding of man's behavior. This seminar revealed an important characteristic of the Institution. A meeting such as this, assaying relations between human social behavior and principles drawn from the scientific study of animal behavior, seems instantly to knit together so many common concerns from within the Institution's seemingly disparate bureaus. Our symposia thus serve as points of focus for a wide range of associated institution activities, from research projects to seminar series to exhibits, from productions for the media to special publications.

Although ecology has now become a popular theme, the committee is well aware of the Institution's traditional and historical role of investigating and collecting data on man and his natural surroundings. Increasingly, national and international organizations, both private and governmental, are recognizing the Smithsonian's competence in this area and are coming to us for advice, consultation, and research assistance on ecological problems. For instance, the Smithsonian's expertise in assessing the environmental consequences of a Panama sea level canal was recognized by the appointment of a staff member to the National Academy of Science's Special Committee on Ecological Research for the Inter-Oceanic Canal. Other Smithsonian staff and research bureaus are actively involved in advising this committee.

Let me also mention that more and more of our research is of an interdisciplinary nature. For example, new information on determining special characteristics and age of volcanic activity has been developed by the joint efforts of our anthropology and mineral sciences staff.

The National Portrait Gallery had its first show under its new director. This exhibition of the portrait reliefs of Augustus St. Gaudens was unanimously praised by the critics. John Canady of the New York Times wrote, "The Saint Gaudens show is, in one word, beautiful, whether you are talking about the sculpture, the installation, or the combination of the two with the handsomest intimate exhibition galleries in Washington or perhaps in this country." The Washington Post stated, "This is an exquisite show. With this, his first show here, Marvin Sadik has demonstrated his museum's ability to meet the highest standards of scholarship and taste." The National Portrait Gallery is preparing to play its part in the celebration of the Bicentennial of the American Revolution.

The distinguished new director of the National Collection of Fine Arts, Joshua Taylor, took up his duties on January 2 of this year. He has already undertaken a careful survey of the holdings of this museum, many of which have long been on loan to various Government offices, and has begun to reorganize the exhibition of the museum's permanent collection. Improved administrative procedures and a renewed emphasis on scholarship under Dr. Taylor's direction will strengthen the ability of the National Collection of Fine Arts to perform its important mission as a center for American art.

A number of other notable events should be mentioned under the collective heading of public services. The Festival of American Folklife attracted over 600,000 persons to a program of craft demonstrations, concerts, and other performances. An educational radio service, "Radio Smithsonian," was established and began the continuing process of producing and making available to stations

across the country recorded material covering the full range of the Smithsonian's enlightening and exciting activities. Through the Smithsonian Magazine and planned additional efforts in traveling exhibits, television and films, we hope to create more educational channels from our vast academic-cultural reservoir to people in their homes throughout the Nation.

These varied extensions of a central theme, to "increase and diffuse knowledge," are part of the Smithsonian. They form a core of the knowledge, which we are attempting both to reinforce and to disseminate. It is imperative that in years to come young people, and their parents, keep up with the changing world but not at the expense of losing their ties with the past. This cannot be done by traditional pedagogical means. It must be done by a variety of skillfully selected techniques. It is our hope and intention that the Smithsonian will help to provide this illumination.

GOALS AND OBJECTIVES

This mandate provides us with our continuing goal for the future. Let me speak more specifically to a number of closely related program objectives and to our plans and requirements that will help us realize these objectives.

We are entering the decade of the 1970's, a period in which the Nation will seek solutions to problems concerning the environmental consequences of technological advances and to problems of man's social and cultural relationships to one another. After much deliberate thought and discussion within the Smithsonian, we see three major objectives that will enable us to focus traditional kinds of careful and deliberate research, collections of multidisciplinary data, reference systems management, and public educational services on these national needs of the new decade. These are :

To study and attempt to explain areas of science and the humanities which can increase man's knowledge and understanding of his surroundings as well as of himself ;

To achieve integration and mutual reinforcement within our arrays of reference collections, books, and other information resources, in order that these resources can be applied more effectively to research needs ; and

To devote an increasing measure of time and effort to studies of cultural and technological development and change, and to improved educational programs bearing upon this theme.

REQUESTS FOR FISCAL YEAR 1971

Turning now to our request for fiscal year 1971, let me say that we are well aware of the strong fiscal responsibilities and pressures placed on the Congress by national and international needs, not the least of which is the absolute necessity to slow inflation. I plan to say more about the effects of inflation on the Smithsonian Institution, but I believe the requested appropriations provide a proper balance between the need for program growth and the need to hold down all but essential Government spending. Although we can see clearly how the contributions of each of our museums, laboratories, and support activities fits into the attainment of long-range Smithsonian objectives, we are not seeking additional program funding for some 15 of these activities.

In examining our appropriation requests, the committee should consider several specific aspects of what initially may appear to be unusually large amounts.

An amount of \$3,125,000 represents the total requested appropriation for the National Zoological Park, an "increase" only because the zoo's operating budget is new to our "Salaries and Expenses" appropriation.

Appropriations of \$10,227,000 are requested to continue construction, restoration, and renovation projects, most of which have been previously authorized and partially funded by the Congress. Of this total, the sum of \$8,897,000 is to meet contractor payments resulting from what we believe will be the speedy construction and completion of the Hirshhorn Museum.

An increase of \$3,777,000 on our estimated "Salaries and Expenses" base of \$29,465,000 is requested for Smithsonian programs designed to serve those who visit and participate in institutional activities for services, studies, information, education, and recreation.

The requested appropriation of \$4,500,000 for the special foreign currency program, an increase of \$2,184,000, does not represent a new assessment against the American taxpayer and should not be considered as being in competition with our dollar requests.

I would like to discuss each of our appropriation requests in some greater detail, showing relationships to our objectives.

SALARIES AND EXPENSES

Environmental assessment, monitoring, and prediction for fiscal year 1971, the Smithsonian Institution is requesting a "Salaries and expenses" increase of \$6,902,000 on an estimated base of \$29,465,000. This increase includes the transfer of the proposed zoo operating budget of \$3,125,000. An amount of \$400,000 is for necessary pay purposes. The balance of \$3,377,000 is distributed in the following categories of activity.

An amount of \$1,350,000 is for improved basic research, documentation, and education related to environmental assessment, monitoring, and prediction. We will give particular emphasis to building on work that the Institution has been doing for over 100 years. Selected research projects in the National Museum of Natural History in biology, geology, and anthropology, chosen because of their importance to the scientific community and their relevance to current national problems, would be funded. Capitalizing on 40 years of project research, the Smithsonian Tropical Research Institute will establish an environmental monitoring program on Barro Colorado Island and conduct an expanded series of comparative marine ecological studies. Related information pertaining to the temperate zone will be provided at the strategically located Chesapeake Bay Center. In the budget year, we will work to establish the Radiation Biology Laboratory firmly in its new building in order that a fully productive basic research program on the effects of radiation on living organisms can be developed. Its extraordinary measurements, started in 1907, now represent a unique series not performed elsewhere.

As additional items under this group of related activities, the resources of the seas can be more fully identified if corrective funding action can be taken to meet a steadily worsening backlog in sorting of marine biological and geological collections and requests for samples at the Smithsonian Oceanographic Sorting Center. Continued funding of our Center for Short-Lived Phenomena will provide a global information network speedily locating and reporting on natural events of tremendous interest to environmental scientists, geologists, and government officials. With regard to the study of man as part of the total environment, we are ready to begin actual work on the revision of the Handbook of North American Indians. Increased funding for our higher education and research training program will provide additional opportunities for outstanding individuals from colleges and universities to share in and contribute to our investigative efforts.

And, lastly, the Institution is seeking special program funding for the environmental sciences aimed at stepping up our inherent capabilities for identifying biological benchmarks, monitoring rates and processes of change, undertaking research in man's social adaptations to his surroundings, communicating environmental knowledge to the public through exhibits and other means, and developing a national referral center for biological data.

REFERENCE RESOURCES

An increase of \$455,000 is to help achieve reinforcement within our arrays of reference resources. A curator's expertise and personal knowledge, built up over a lifetime of study, represents an information resource as do the books and reprints he requires and the ordered materials of a collection. We are purposefully seeking ways to coordinate these resources so that each reinforces the others to the maximum practical extent. Not books separate from objects; not specialized information services separate from either; but rather integrated reference systems which can unite all three. The Smithsonian's uniqueness and value depend upon our success in being a different kind of marshaling center where recorded knowledge can give wide access to pertinent inquiry.

In fiscal year 1971, we feel that it is most important to seek your support in applying electronic data processing techniques to handling the complex data associated with our vast art, history, and science collections; to strengthening library staff and materials critical to productive research and education efforts; and to improving our photographic laboratories which provide visual information of a very important kind.

CULTURAL AND TECHNOLOGICAL DEVELOPMENT AND CHANGE

We are requesting an increase of \$1,125,000 to be used for studies and displays of cultural and technological development and change, so closely tied-in with man's own physical evolution and to his relationships to his natural sur-

roundings. Much more needs to be done to develop exciting and stimulating displays of these themes, not only for our use but also to benefit other museums in their education efforts. We are seeking funds, therefore, to develop experimental exhibits and to provide opportunities for museum training under the National Museum Act. To meet the accelerated public interest in man's aeronautical and astronomical achievements, funds are requested to meet the Institution's commitments under our space artifacts program.

The Anacostia Neighborhood Museum has demonstrated its ability to meet the practical needs of the community. Building upon this public acceptance and involvement, we are anxious to increase the educational role of this museum in analyzing and interpreting the history of the community and its peoples. The award of the Hirshhorn construction contract now clears away all major road blocks to providing the museum building. Companion steps must now be taken to assure that the collections and exhibits will be ready for display. We are also very enthusiastic about our other new museum—the Renwick Gallery of Art—and are requesting funds to prepare for a fiscal year 1971 public opening. One of the most popular activities in which the Smithsonian has engaged continues to be its Folklife Festival and similar presentations. To bring the tools and musical instruments out of glass cases, to evoke the magic of folk crafts and music, all of this is to communicate directly to the people. We are seeking a small increase in funding for these activities.

The 200th anniversary of the United States is a momentous occasion for all of us. The Bicentennial of the American Revolution presents an extraordinary opportunity to review national accomplishments and goals, and to renew public hope and confidence in the future. The Institution can play an important role in this observance, as we did in 1876, drawing upon our scholarly staff, collections documenting the history and development of the United States, effective working relationships with museums and other organizations across the Nation, and strong attraction for the visiting public. The American Revolution Bicentennial Commission has already reached two vital conclusions. First, the Bicentennial should be national in scope and not confined to the original 13 colonies, and second, that the event is an opportunity to review and assess the first 200 years of the United States, not merely to commemorate the events of the last quarter of the 18th century. These two policy decisions establish the framework within which the Smithsonian plans its participation. It is our intention to draw on all the elements of the Institution to form a coordinated program of activities which are festive in nature, as well as those which capture the ideas and ideals of the American Revolution period. We are proposing to develop a comprehensive array of exhibitions, both for Washington in planned pavilions on the National Museum of History and Technology and for circulation to other communities. Also planned are publications, seminars, and advisory and technical services to assist other museums and State and local history organizations in their commemorative activities. In order to mount any significant program at all, we must begin to phase into these activities now.

ADMINISTRATIVE AND CENTRAL SUPPORT

An additional amount of \$447,000 is sought for administrative and central support services and for the maintenance, operation, and protection of buildings. Cohesive programs must be given concentrated management and technical support and assistance. These requested funds will be used to strengthen our financial and personnel management capabilities and for the Buildings Management Department. Included in this latter request are the costs of serving the Renwick Gallery as it is being prepared for opening and for operations afterwards, and funding the higher costs of utilities, communications, the repair and preventive maintenance of security and fire detection systems, elevators, and escalators. These higher costs are brought about by additional building spaces provided by congressional authorization, increased public use, and inflation in the price of goods and services. Our present level of funding is placing us farther behind annually in our ability to service our present assigned responsibilities.

SPECIAL FOREIGN CURRENCY PROGRAM

The requested increase for fiscal year 1971 for the special foreign currency program is \$2,184,000 for a total appropriation of \$4,500,000. The increase is essential to support urgent field studies by American museums, universities, and other institutions of higher learning in the Smithsonian's traditional fields of

systematic and environmental biology, astrophysics, anthropology, and museum programs. These studies increasingly are recognized as basic to an understanding of immediate national and world problems of environmental quality and cultural change. There are a number of very important points about this program. Let me mention several of these. During fiscal year 1970, funds are sufficient only to cover on-going project activity which has increased from nine grants in fiscal year 1966 to 140 at the end of fiscal year 1969. There are no funds to support new investigations this year, yet new inquiries continue to average about one a day. These funds are an advantageous source of research moneys because they are not new appropriations of tax dollars and because delay in their use means continuing loss to the U.S. Treasury through inflation and devaluation. Use of these funds does not contribute to a balance of payments deficit. Smithsonian foreign currency program grants have benefited more than 200 institutions in 25 States. Accomplishments include over 40 research publications, 150 postdoctoral research opportunities for Americans, 110 training opportunities for American Ph. D. candidates who obtained essential field work experience, and valuable additions to research collections of the National Museum of Natural History and of other grantee institutions in the form of archeological, ethnographic, and biological specimens. This program has had solid accomplishments and offers a great potential for additional contributions. I would like to re-emphasize that an increased appropriation should not be considered as being in competition with our other budget requests.

CONSTRUCTION AND RESTORATION AND RENOVATION OF BUILDINGS—NATIONAL ZOOLOGICAL PARK

For fiscal year 1971, the Smithsonian must again defer a request for funds to resume progress toward completion of the improvement program. This will be the fourth consecutive year of the holding action, with approximately \$2 million of work, planned in connection with the approved 10-year construction program initiated in 1963, being deferred. This deferral includes the much-needed public service building containing visitor orientation and restaurant facilities. An appropriation of \$200,000 is requested for repairs and continued maintenance to keep those buildings and exhibits, which eventually will be replaced, in usable condition. Included in the necessary projects are waterproofing buildings, painting of buildings and cages to prevent structural damages, and repair of outside cages.

RESTORATION AND RENOVATION OF BUILDINGS

Our total request for restoration and renovation of existing buildings amounts to \$1,130,000. Included in this request is an amount of \$300,000 to complete a several year program of restoration of the Renwick Gallery of Art on Pennsylvania Avenue. These funds will make this historically important and centrally located building fully available for use and enjoyment by the public. An appropriation of \$500,000 is sought to begin to implement the plans, funded in fiscal year 1967, for the renovation of the 90-year-old Arts and Industries building. We are seeking to construct second floor decks in this building to provide much needed space for administrative, classroom, and other public service purposes. An additional \$25,000 are sought to continue emergency repairs to badly deteriorating facilities used by our Smithsonian Tropical Research Institute for biological research. The care and preservation of many of the organic specimens in the natural history collections, as well as the safety of the staff in handling toxic fumigants, requires that we obtain \$75,000 for the construction of a modern fumigation facility in the Natural History building. Improved space utility and the need to house properly our library collections including rare and valuable books prompts our request for \$50,000 to construct a mezzanine level in space now used by the Smithsonian Libraries in the Natural History building. We are still exploring ways to provide improved management of our collections by developing an off-Mall central museum storage and study facility. An appropriation of \$80,000 is requested for the preparation of plans and specifications for the first increment of a long-range development program. And, lastly, we are seeking \$100,000 to prepare feasibility studies for the future building needs of the Smithsonian Institution, including research facilities and museum space to improve and expand our exhibits and educational programs for the benefit of the people of the United States.

JOSEPH H. HIRSHHORN MUSEUM AND SCULPTURE GARDEN

Construction work on this new museum building and its associated sculpture garden will be in full progress during fiscal year 1971. An appropriation of \$8,897,000 is requested to liquidate the balance of the contract authority of \$14,197,000 provided in the 1969 appropriation. This appropriation will be used to complete funding of construction contracts, to finance supervision and related construction management costs, and to provide some necessary equipment and facilities to install the Hirshhorn Collection in the completed building.

INFLATION

I would like to return to the damaging effects of inflation that I mentioned earlier. Inflation is severely affecting the growth and performance of the Institution. It can be shown that over two-thirds of the appropriation increases experienced since 1968 have been directed to nondiscretionary costs associated with new building space and to offsetting inflationary pressures. Only about one-third of these increases represents a real strengthening of program operations.

In fact, scientific research and curatorial activities in some museums may not be faring as well now as they were in 1968. A good example would be the National Museum of Natural History. The number of professional research staff at the Museum has remained at approximately 100 since 1968. The salary levels have increased about 20 to 25 percent; the total operating budget has increased only about 16 percent, or \$500,000. To meet this faster rate of growth in professional salaries not fully offset by pay supplementals, the Museum has had to reduce support spending in other areas. The portion of total Museum funding devoted to scientific staff support in the form of equipment, travel, and the like, has decreased from 13 to 11 percent over the past 2 years. This trend has created hardships in the Museum's day-to-day scientific research and collections operations where prices for supplies and equipment also have continued to increase. For example, there is an annual need for several thousands of dollars for storage cases to accommodate newly acquired natural history collections. These cases represent a major museum expenditure. They are ordered in varying sizes—from 2' drawer depth to 8' depth. They are labor-intensive in their construction. For several years now, the prices of these items have been rising. The Institution has shopped the various supply outlets and now purchases the cases from a manufacturer in western Maryland. Still, the unit prices have increased 30 to 40 percent since 1968. Because of these and other inflationary pressures, the National Museum of Natural History may be operating in real terms with \$100,000 less than in 1968.

The same kind of situation prevails across the entire Institution. The Smithsonian's operating appropriation in 1970 will be about \$29,600,000 (assuming the 1970 requested pay supplemental is approved), or \$5,300,000 above the 1968 level. This is a 21-percent increase over 1968, a sizable gain on the surface. It must be kept in mind, however, that the Institution's employment during this time has remained relatively stable. Current employment is only approximately 4 percent above 1968 levels, and roughly the same proportions continue to be devoted to guards, laborers, clerical, and professional research and curatorial staff. Of this \$5,300,000 increased funding, roughly 64 percent can be associated with higher prices and the necessity of improving the competitive salary situation in Government. Another 4 percent reflects nonpersonnel costs associated with new building space. About one-third of the \$5,300,000 can be directly related to strengthening and developing the base of institutional programs. Thus, the apparent increase reduces to a real annual growth in the Smithsonian Federal base of about 4 to 5 percent.

For illustration, a competent scientist to conduct research or curatorial investigations in one of the dozen or so areas of Smithsonian responsibility could have been employed for approximately \$17,000 in 1968. Today, this figure is closer to \$21,000 in order to obtain quality performance in a talent-oriented economy such as ours. Some examples of price increases in other areas which have affected the Smithsonian operations are in the areas of general maintenance and improvement of facilities, and the construction of exhibits. The Institution annually uses a large quantity of lumber, particularly plywood and sugar pine, for these purposes, and the market prices of these commodities have increased 17 percent and 21 percent since 1968. We estimate that prices for utilities are about

11 percent higher than in 1968. The price of laboratory coats increased 9 percent between 1969 and 1970; guards' uniforms increased about 7 percent between 1969 and 1970; a roll of film now costs us about 8 percent more than in 1968. The list could be lengthened indefinitely.

Inflationary pressures, along with related aspects of continuing controls and curbing of Government employment, will steadily diminish effective performance in all operational areas. We are regularly reviewing our use of current manpower and dollar resources. It is by no means certain that we will be able to sustain our current level of public services including the present and planned schedule of public visiting hours to our buildings. This is a matter we are watching closely.

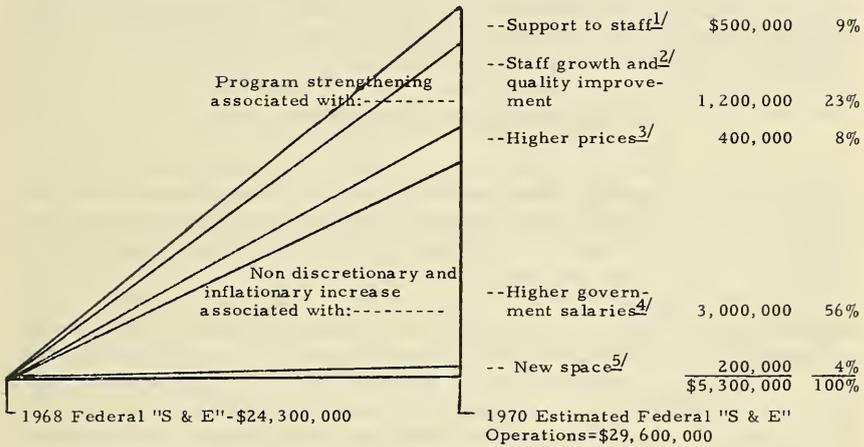
SELECTIVITY AND PRIORITY IDENTIFICATION

The 1971 budget request has been constructed in a manner to offset some of the effects of inflation and to spur the growth of selected institutional activities. The budget request reflects a moderate expansion in personnel while focusing on providing some additional program support funds.

These requested increases are the result of difficult choices and the identification of priorities at each stage of our analysis and review of the use of current resources and our essential requirements for the budget year. As the Congress will realize, executive pressures exercised through the Bureau of the Budget have been very strictly levied upon us this year.

All but our highest priority funding needs have been temporarily set aside. We are concentrating our requested increases on meeting existing and traditional institutional obligations and lines of endeavor that seem particularly timely and applicable in the 1970's. For 124 years, with roots that extend back even further, the Institution has gathered and applied its resources to the task of providing the American people with greater knowledge and appreciation of their common environmental, cultural, and technological heritage. With the continued support of the Congress, we will improve upon our performance. This support is deeply appreciated.

SMITHSONIAN INSTITUTION
 Estimated Distribution of Increases in
 Federal "S & E" Operations
 1968-1970



1. This \$500,000 represents the real increase after allowing about 4 percent per year for inflationary price increases (a conservative rate).
2. This includes an estimated \$900,000 related to a 4 percent employment growth and approximately \$300,000 of expenditures for increasing the quality of staff 1968-1970.
3. Conservatively reflects a 4 percent annual increase above 1968 levels for inflation in non personnel costs.
4. Includes an estimated \$2,500,000 to cover costs of higher governmental salary levels, and \$500,000 for cost-of-living increases.
5. Includes additional building costs (non personnel) over 1968 levels related to Fine Arts and Portrait Gallery and the Renwick Gallery.

Dr. RIPLEY. May I begin by introducing some of the Smithsonian colleagues who have joined me this morning?

Mrs. HANSEN. Please do.

Dr. RIPLEY. You know, of course, Mr. Bradley.

Mrs. HANSEN. Very well. We are very happy to have you here, Mr. Bradley.

Dr. RIPLEY. Mr. Blitzer, Assistant Secretary for History and Art; Dr. Galler, Assistant Secretary for Science; Mr. Warner, concerned with our Public Affairs; Dr. Reed, the Director of the National Zoological Park, who is a newcomer to this committee; Mr. Wheeler, our Treasurer; and Mr. Jameson, our budget officer.

Mrs. HANSEN. I sat next to the Director of your Natural History Museum on the plane going to Seattle the other day, and he is a very delightful person.

RECENT SMITHSONIAN DEVELOPMENTS

Dr. RIPLEY. Thank you. I want to report, if I may, Madam Chairman, in the beginning that the Smithsonian has had really a good year this year. We have some notable developments in our gifts and activities. I brought one or two of our acquisitions along. I just thought that they would interest you.

These, for example, are two coins which were given to the Smithsonian by Mr. Willis du Pont, part of the Du Pont collection. The gold coin is dated February, 1702, an extremely literary ducat piece, and the platinum coin is one of only two 12-ruble platinum pieces struck in 1845. The value of this collection, as a whole, is very great, and I might just point out that those two coins themselves are worth about \$80,000.

We have, in addition, as an example, performed a number of interesting scientific tasks. You may have heard that this last year we completed an experiment begun in 1907 in the middle of the Mall with the sad news for the population of Washington that there has been a decrease of 16 percent in the amount of solar radiation penetrating to Washington during that time.

Mrs. HANSEN. To what do you attribute that decrease?

Dr. RIPLEY. We can only attribute it at the moment to the presence of smog in the atmosphere, because there is a change on certain kinds of days, but the net decrease is 16 percent, which could have quite critical effects, of course, on agriculture.

Now, it sounds like pessimistic news. We don't really know what the effect will be, for example, on photosynthesis of plants.

Mrs. HANSEN. Isn't this also true of other areas in the country?

Dr. RIPLEY. Undoubtedly, but it is interesting that the Smithsonian, and I don't want to sound too much as if I was blowing our horn—

Mrs. HANSEN. Since when have you been reluctant to do that?

Dr. RIPLEY. I feel it is extraordinarily interesting that somebody has bothered to do this.

NEED FOR INCREASED AWARENESS OF ENVIRONMENTAL DETERIORATION

Mrs. HANSEN. What will happen in the future if certain nuclear developments continue to pollute our environment?

Dr. RIPLEY. We are very much concerned at the moment. Again I hate to sound like a Cassandra or something of this sort. We are concerned about the fact that some of the things thrown out are not even being currently measured by the Atomic Energy Commission, and elements such as tritium, which are getting into the atmosphere and into the water may be more critical than anybody has so far developed experimental proof concerning.

Mrs. HANSEN. Have you talked with the Atomic Energy Commission to urge that they give more attention to the environmental problems? This committee, as you know, has been increasingly concerned about our environment. We have been interested in this problem for many years. We have seen an increasing number of problems that have resulted from man's misuse of his environment, and we have warned against them.

Yet, at the same time we see a decrease in the Government's funding for these necessary preventive measures. For example, last year this committee appropriated \$200,000 for a water research project in the Northwest. These funds were to be used to study the effects of radiation on fish.

But the \$200,000 was placed in reserve by the Bureau of the Budget. Those funds have not yet been released. We still don't know exactly what effect thermal pollution will have on fish.

I made a statement last week in Vancouver, that we did not have available the information to explain to the public what the necessary steps are to safeguard our fishing resources.

Dr. RIPLEY. Yes.

RELATION OF ECOLOGICAL ASSESSMENT TO THE AMERICAN ETHIC

Mr. HANSEN. Do you feel that the Atomic Energy Commission has done its share of contributing to this basic research, which is going to touch every segment of the country?

Dr. RIPLEY. I feel that they are beginning to understand the difficulties involved, and I mean this very seriously, the difficulties involved of trying to develop an ecological assessment program along with the American ethic of the present, which is more value for the dollar, more assets for everybody in the way of standards of living, and the American assumption that because you can have more machines, and you can have more powerplants and you can have more power, all houses should be heated, lighted, et cetera, exclusively by power, things of this sort, that that is the way to operate.

I am very sorry to say I think it is probably not the way to operate, but it has been so much an assumption of ours for the past 150 years that it may take almost a generation, short of some catastrophe, to reeducate people, people of my age from the beginning and younger people as well, to understand that that isn't the way to live, and that we can't afford to. This is tied up with the ability of someone like the

Atomic Energy Commission to be able to grasp the magnitude of its own responsibility.

Mrs. HANSEN. They also have to take the responsibility for developing adequate solutions. If we have the capability to go to the moon, we certainly should be able to develop some answers to some of the problems in the thermonuclear field.

Dr. RIPLEY. I think this is very true, Madam Chairman, but I think that it is a matter of education. I am sure that the AEC has been prudently requesting funds from the Government and expending them, but they have been requesting those funds and expending them in relation to what they assume to be the American ethic.

If it is determined now by the people and by our Government that the American ethic is wrong, then all these agencies will have to get into an area of research, all the education institutions in this country will have to get into an area of education, which may take as long as a generation.

NEED FOR PUBLIC EDUCATION ON THE ENVIRONMENT

Mrs. HANSEN. For example, I don't think that adequate solutions have been developed to solve the adverse effects of a warm stream on fish. We have a number of pollution problems and at the same time we have an ever increasing need for energy. Therefore, there are two processes that must be accomplished. We must educate this generation to control its own pollution and increase our knowledge so that technology will be developed to solve these problems.

Dr. RIPLEY. This, of course, is an international problem, because Americans are the greatest polluters in the world. There are 200 million of us and the amount of pollution that we expend into the atmosphere and the water is equivalent to a population in India of 6,400 million. In other words, about 8 times the present population of India. One American can pollute and does pollute at the rate of about 32 Indians today. India is still in a rather impoverished, underdeveloped state compared to the United States. Think what would happen if there were 6,400 million Indians polluting at the same rate that we do at present.

Mr. REIFEL. Madam Chairman, it seems to me with all of the intelligence and intellect that is part of this development, that under the present circumstances from what you have just said, they would be able to crank into the American ethic a livable environment. It seems so elemental.

Mrs. HANSEN. The American people must understand that they will have to pay for pollution control.

Dr. RIPLEY. Well, it is contrary, Madam Chairman, to everything that we have been brought up to believe in.

DETERIORATION OF RESPECT FOR PROPERTY

Mrs. HANSEN. No; it isn't, Dr. Ripley. In my childhood I was told that you did not go into the woods with a lighted match because we could see all around us the results of fire. We were raised with a tremendous respect for fire because there was no modern fire-fighting equipment. We had a tremendous respect for other people's property.

If our parents or anybody caught us destroying anybody else's property, the consequences were severe.

School grounds were never littered, because anyone that littered school grounds stayed after school to pick up the litter.

There was no vandalism in cemeteries. People had respect for other people's property. When I was home recently, a group of young motorcycle riders went through a small town cemetery, destroying the tombstones. As I told a group of students when I was home, "You people are the leaders in destruction and you are also the leaders in wanting a change. Now is the time to do what you are advocating. You must individually work to correct the environmental problems."

Dr. RIPLEY. I quite agree with you in that. There has been a signal deterioration in our sense of conservation and preservation of objects and things.

Mrs. HANSEN. Our sense of responsibility to our fellow man has also deteriorated.

(Discussion off the record.)

Mrs. HANSEN. Please continue with your statement.

CROWN OF THORNS STARFISH

Dr. RIPLEY. I wanted to mention one or two other interesting things of the year. One is the crown of thorns starfish, which I know you have already heard about.

Mrs. HANSEN. Yes; and we are deeply interested in these problems.

Dr. RIPLEY. We have a crown of thorns on exhibit here. It is one of our own specimens. We have been asked in legislation that has been introduced if we would participate in a research project on attempts to cut down this exploding population in the Pacific. That project would be jointly with the Department of the Interior, under legislation introduced by Senators Fong, Inouye, and Jackson. We have participated during the past summer in crown of thorns research, and we have an article about it in our new Smithsonian magazine, which I am sure Madam Chairman has seen.

Mrs. HANSEN. Yes, I have seen a copy of that article.

Dr. RIPLEY. There is an article on the crown of thorns starfish.

Mrs. HANSEN. The Samoans, when they testified before this committee about the crown of thorns problem, said that the problem had always existed, but that some ingredient had stirred renewed activity. This committee wondered that day if the AEC had conducted research to determine what were the causes of this increased activity. As you know, the atomic explosions that occurred in the South Pacific have generated a lot of fallout, and perhaps that was an ingredient in the increase of the crown of thorns starfish.

Dr. RIPLEY. We have participated with the Geological Survey since Bikini, in the followup study of the reefs there, and I do not believe so far as I know that there has been any effect causing the unusual population of the crown of thorns starfish at Bikini. It has also occurred farther west around Guam and in the Barrier Reef and down into the Central Pacific. But I do believe that one of the interesting things about the whole occurrence is the fact that it proves how important these environmental studies are, because, in fact, we know so little about what the crown of thorns was doing before. It shows where

you do have information, as in certain areas we have with food fishes along the New Jersey coast, for example, the importance of having made that study before vital changes have taken place in the environment, as they are taking place every day now. We only wish that we had known more about the crown of thorns, and that there had been more information on what essentially has been considered to be a very rare starfish. It is a good example of lack of backup information, in contrast to other areas where we have much more.

LOST CITY, OKLA., METEORITE

Our astrophysicists found a meteorite this year within 6 days of its falling. This is always a signal event in astrophysics. By quickly finding the meteorite, which was tracked out in the prairies, we were able to get it back into the laboratory within one day of the find, and test for some of these rare elements which are in the atmosphere, and which are otherwise only produced by atom smashing instruments.

Mrs. HANSEN. Is the Smithsonian Institution part of the group that is studying the impact of the moon dust?

Dr. RIPLEY. We have samples of moon soil, but not from that particular core. It is true that there has been a rather provocative little discovery that one piece of soil from a core in the ground killed off three common bacteria. Of course we don't know anything more than that at the moment, but we were not part of that particular experiment. We have been analyzing surface soil, and will continue to have a part in the general program, a small part.

Mr. REIFEL. You started to talk about the meteorite and its analysis. Would you continue?

Dr. RIPLEY. Yes, this meteorite was found in Oklahoma. Its path was traced by the Prairie Network of the Smithsonian Astrophysical Observatory that maintains this camera network. They were able to trace the approximate area where it fell, go out there in a station wagon, and find a chunk of it and get it back within 1 day of finding it to the laboratory for testing of these rare gases. They were able to ascertain that the meteorite probably comes from the asteroid belt beyond the orbit of Mars, which is a particularly interesting area. It is thought by some astrophysicists that within this asteroid belt there is the presence of certain elements related to carbon and oxygen, for example, which may presage a kind of formation of life within the asteroid belt itself. This is a very speculative area of astrophysics but one is always looking for meteorites that may have some clues to the origin of life. In many ways once you get one it is just as fascinating as if you had really gone all the way to the moon.

We are pleased to have further very generous donations from Mr. Hirshhorn. We are very pleased with his donations.

SOUTHEAST ASIA WILDLIFE STUDY CARDS

We have also been working on a variety of things which are worthwhile, and show our expertise, and I proffer these cards which you might like to have in the record. These cards were made up for identification of useful and poisonous animals or plants in the

general area of Southeast Asia, and they are very interesting. They can be dropped by parachute. They can be given to troops in the field or used by other persons in the area. We did this on contract as an extra dividend. It is helping the war indirectly, shall I say. It is a useful thing for educational purposes for troops, so that when they are out in the field, they have a handguide to things which may be harmful as well as things which may be helpful.

We are also preparing a comprehensive flora of North America, which we would be glad to supply you with.

CENTER FOR SHORT-LIVED PHENOMENA

This meteorite record was produced partly with the help of our Center for Short-Lived Phenomena that is located in the Astrophysical Observatory. This Center now has 1,200 people around the world participating in sending in key bits of information about everything from volcanic eruptions to lava flows to other extraordinary biological events. It has been very active in connection with oil spills. We have been able to get very rapid observations of effects on animals from oil spills through this network of informants who wire into our service in Cambridge, Mass.

ENCOUNTER SERIES

As part of our public information activities during the year, we have had a very good panel discussion series in the Smithsonian called "Encounter." A number of Members of the Congress have participated with us in these biweekly or monthly panel discussions. As you know, Madam Chairman, it was the hope, from the very beginning of the Smithsonian, of Joseph Henry and others, that we could perform a valuable service as a kind of public platform in Washington, where members of the Government, the Congress, people of influence in the country would be in touch with scholars and other people who had important information to give them. The Smithsonian would serve as a kind of lyceum.

We were through the 19th century a kind of chautauqua, as it were. Discussion groups were then perhaps more powerful and more important than they have been recently. But I sense a return of great interest in this kind of forum. We hope to continue this, continuing a classic Smithsonian tradition, and to have an important effect in Washington by doing so.

Our next "Encounter" series lecture or discussion is the 16th of April, next week indeed. There will be a number of people including Members of the Congress on this panel. After each participant has made a short statement the session is thrown open to public questions. They have been very lively, very useful and very well attended, standing room only.

RESTORATION WORK DONE BY THE NATIONAL COLLECTION OF FINE ARTS

I wanted to just show you some pictures of some of the restoration and conservation work done by the National Collection of Fine Arts. These photographs show you quite graphically what restoration and conservation will do to a painting. Here is a "before" photograph and

an "after" on the same painting. These are American paintings by important American artists.

Mrs. HANSEN. Are the paintings in your gallery collection?

Dr. RIPLEY. Yes, in our own gallery collection. This is an early 18th century painting in terrible shape, and this is it after treatment. I think it is very important for us, as administrator of collections which have come to us in so many different ways, to be able to do the right thing. We help the Nation through our facilities in learning how to do the right thing, because this service is then available to museums right across the country. This is a tremendous kind of central service facility.

SMITHSONIAN STUDIES OF INDIAN AND OTHER CULTURAL GROUPS

The recent Subcommittee on Economy in Government of the Joint Economic Committee of the Congress, in its publication in 1969 on development prospects and problems among the Indians had a very important contribution from our Center for the Study of Man on Indian Problems in this country. This was a very highly valued and significant contribution. As I have so often said to the committee, we are particularly anxious to develop the documentation, the cultural history, and information for the future on possibilities for cultural development of the Indians of this country, as well as all ethnic minorities and ethnic subcultures and subgroups. I have felt that this capability was a widely recognized asset of the Smithsonian, but one which should be cultivated more, because the ethnic minorities in this country deserve not only to have a place in the sun economically and for a better life, but they also deserve to know and understand and admire their contributions.

Mrs. HANSEN. They also need to understand their own heritage.

Dr. RIPLEY. Yes, their cultural heritage. We have felt that our Center for the Study of Man should assure that our history as an institution is preparing us for the ability to do this with younger generations of ethnic subcultures and troubled youth.

PROBLEMS OF MUSEUMS THROUGHOUT THE COUNTRY

Mrs. HANSEN. There are some very excellent museums in various parts of the country that have tremendous collections, particularly on Indian art, and yet I sense that there is a lack of funding to sufficiently keep their exhibits in the best condition.

(Discussion off the record.)

IMPORTANCE OF OBJECTS IN UNDERSTANDING HISTORY

Dr. RIPLEY. The creation by the Congress of the National Museum of History and Technology of the Smithsonian has given a tremendous interest to the field of historical preservation. I might say that within the past 20 years the average teaching in history, the departmental work in universities in history, was sadly deficient in any understanding of objects and the care of objects. The history books were enough, and the objects go out the window.

Since the creation, I really think, and the opening in 1964 of that Museum of History and Technology, a new wave of understanding has gone across this country.

Mrs. HANSEN. You need to work with the universities to include the human element of history in their history courses.

Dr. RIPLEY. Yes.

Mrs. HANSEN. Some of our universities are lamentably lacking in an understanding and an appreciation of the total import of history.

Dr. RIPLEY. I quite agree with you, Madam Chairman. This is something we are trying to address ourselves to in two ways. One is to bring historians to work in the Smithsonian, who will then gain this kind of understanding, and then go back to the field.

Mrs. HANSEN. History is one of the most vital studies we have.

Dr. RIPLEY. Yes.

Mrs. HANSEN. It should be presented not only in a book, but also as a visual experience.

SERVICES UNDER THE NATIONAL MUSEUM ACT

Dr. RIPLEY. Right, absolutely, and tactile. A contact experience absolutely. The other thing is that through the establishment of the National Museum Act, and the idea that the Smithsonian had services to perform to the museums in the field, we have found where these needs and where these gaps are. We are now getting over 1,000 requests a year for help to go out to the museums, to help them plan, to help teach them the conservation techniques that they need to help them with their exhibits. Of course we can't do it because we don't have the money, but it shows that there is a tremendous ground swell of this sort of need. We are trying at the moment to get our National Museum Act reauthorized, because that particular Act requires reauthorization, and trying keenly to evoke the interest of the government in supporting that program, which is a supportive program for museums in the field. This program is not for our benefit. It is simply giving us the tools to help the people who are asking us for help.

REVISION OF THE HISTORICAL MUSEUM IN WASHINGTON STATE

Mrs. HANSEN. At the present time my own State is involved in the contemplation of revising their own historical museum. They have a fine start but the housing, management, and funding all have to be further considered. It would seem to me that this is a great opportunity for the State to begin to provide matching funds for some of their students to inaugurate a creative imaginative program.

If the State doesn't take this opportunity, they have lost a golden opportunity. I would hope that somebody from my State is in contact with you to discuss their museum future.

Dr. RIPLEY. And I would expect they would be, because this Museum Act has been quite widely advertised in the museum field. Our sole problem is how to react when we get the appeal, because as I say we lack the funds and we lack the reauthorization at the moment to continue with the work.

BELMONT REPORT

You know that the American Association of Museums had a survey and a study of the needs of the museum field, which was initiated by a letter from President Johnson asking them to state what their

needs were. This report is called the Belmont Report. One of its points, among others of great importance, was to urge the Congress to support this National Museum Act, so that the Smithsonian could enlarge its ability to help the museums across the country in these special technical problems, which we are studying all the time, and for which we believe that we have some of the answers.

BICENTENNIAL OF THE AMERICAN REVOLUTION

There is a close relationship to this, Madam Chairman, and the Bicentennial of the American Revolution. I should point out that we think our History and Technology Museum will be one of the focal points for the celebration of the Bicentennial in 1976. Consequently, we are continually attempting to plan for this involvement. We have been encouraged by the Congress in the past to consider this and also, this year, by President Nixon's budget program. I have a statement on our hopes for the Bicentennial, which I would like very much to add to the record if I may.

Mrs. HANSEN. Please do.

(The information follows:)

THE NATION'S BICENTENNIAL

I. A SMITHSONIAN PLAN

The Bicentennial of the American Revolution offers the Smithsonian Institution a unique opportunity, and an urgent duty, to pursue its mission to the Nation and to the world. The assignment from our founder, James Smithson, was to insure "the increase and diffusion of knowledge among men." Our vocation, declared by our first Secretary, Joseph Henry, the American pioneer and prophet of the electronic age, was to remind men that "knowledge should not be viewed as existing in isolated parts, but as a whole. Every portion throws light on all the others." To enlarge, to unify, and to communicate knowledge is the Smithsonian tradition.

The Nation's approaching 200th birthday—like other national celebrations—gives the whole Nation an occasion to recall its achievements and to renew its self-confidence. The Smithsonian Institution will use its vast resources, and enlist the resources of others, to help rediscover our national achievements. The Smithsonian Institution will also use its resources to draw together the numerous and varied celebrations of the Bicentennial into a coherent rediscovery of the meaning of the American experience. But all national celebrations are temptations to a preening chauvinism and to a sterile and antiquarian introspection. Our purpose will be not only to help the Nation resist temptations to complacency and to the wasteful dispersion of its celebrating energies, but to help give the national celebration a grandeur of movement and a direction worthy of the occasion.

We aim to help Americans and the world see the American experience as a grand experiment of man. We aim to explore and assess the ways in which the life of man here has been shaped by the peculiar resources of our continent, and so help us see how we have shaped (and misshaped) the landscape of a New World. We aim to help Americans discover the meanings of the American experience for the world. We aim to help the world discover the meanings of the American Revolution and the American experience for man everywhere. We aim to draw on the whole American experience to illuminate the unfolding problems and promises of late 20th century—and to help us draw hopeful prospectuses for the 21st century. We aim to help set new knowledge in the context of history.

For this effort the Smithsonian Institution is providentially prepared. The Smithsonian Institution is a uniquely comprehensive group of enterprises surveying, exploring and studying every aspect of man's life and work—his political and military institutions, his science and technology, his fine arts, his graphic arts, his performing arts, his use of natural resources, and his adven-

tures of exploration on this planet and into outer space. We have a long and rich tradition of free interchange of ideas with the world of learning. The Smithsonian has been a center for study of the resources, natural and human, of the whole continent. The Smithsonian incorporates the National Museum, the repository for myriad objects sacred to our history and illustrative of the American experience since the beginning.

In the Nation's Capital, the Smithsonian offers a uniquely effective and appropriate site for dramatizing and interpreting the American experience. Now some 13 million people each year visit our museums in Washington. By 1976 this figure is likely to reach 20 million, and interest in the Bicentennial, with the many visitors from abroad, may bring the number to 30 million. The Smithsonian, therefore, can substantially assist the American Revolution Bicentennial Commission in making the Nation's 200th birthday an occasion of national rededication and of festive celebration.

The theme of the Smithsonian's Bicentennial celebration is the American experience.

We propose that on January 1, 1976, each of the Smithsonian's 10 museums as a culmination of research and exhibitions begun in 1970, open a major exhibition commemorating the bicentennial. At the same time a guide will be published showing the coherence of the Smithsonian's many activities in exploring and illustrating the American experience.

We propose a coordinated multimuseum exhibit approximately as follows: At the National Museum of Natural History the visitor will learn about the land and its original inhabitants, and he will see what has happened to these people and the effects wrought upon the land by the changing nature of our society since the first Europeans arrived;

At the National Museum of History and Technology he will see an exhibition about the cultural, industrial, and political development of the United States;

In two special Bicentennial pavilions he will see the contributions other nations have made to this Nation, and in turn, the impact this Nation has had upon other nations;

In the National Portrait Gallery the visitor will see the likenesses of the diverse men and women who have made America;

In the National Collection of Fine Arts he will see a historical survey of art in America, emphasizing those qualities which are distinctly American, from the days when this country was artistically a province of Europe to the time when it became a leader in artistic creativity;

In the National Gallery of Art¹ the visitor will see a magnificent panorama of the artistic world of 1776, while across the Mall the Hirshhorn Museum will show a similar panorama of the artistic world of 1976;

In the National Air and Space Museum he will see an exhibit of what is perhaps America's greatest technological achievement, the conquest of outer space, and of the Nation's future in the space age;

In Bicentennial Park, on the banks of the Potomac, he will see a recreation of the life of the citizen-soldier who won our freedom two centuries ago;

On the Mall during the summertime, and in the Kennedy Center for the Performing Arts, he will see performances of American music, dance and drama, and demonstrations of American folk arts and crafts.

Our Bicentennial exhibition—The American Experience—will be the first occasion when so many of the resources of the Smithsonian will be devoted to a single theme. The exhibits outlined above, plus others that we will develop in the Renwick Gallery, the Freer Gallery, the Anacostia Neighborhood Museum, the Arts and Industries Building, and on the Mall, will be conceived as part of the large thematic pattern. Each of our museums will use its resources, its collections, its scholarly staff, its designers, its educational experts, to fulfill its part of the overall plan. The Smithsonian Office of Academic Programs, the Office of Exhibits, the Smithsonian Institution Press, the Division of Performing Arts, and other Institution-wide organizations will support this common purpose.

The observance of the Bicentennial, while focused on 1976, neither begins with the anniversary of the signing of the Declaration of Independence on July 4 nor stops after 1976. Rather, July 4, 1976 will be a climax in commemoration of a series of events that began in the 1760's and went on until the Treaty of Paris in 1783. There are many events in that time span which will produce local cele-

¹ We intend to coordinate our plans with those of the National Gallery and the Kennedy Center, which are separately administered affiliates of the Smithsonian.

brations throughout the United States. The Smithsonian itself hopes to commemorate many of them and to participate in the commemoration of others, both here and abroad.

To serve the millions of Americans who cannot visit Washington, the Smithsonian will assist museums throughout the country. Our performing arts program cooperating with the Kennedy Center for the Performing Arts, will offer plays, song and dance festivals, and other dramatic presentations from our national past at major centers throughout the United States. In addition, we intend to make available to scholars everywhere the results of the research we will be undertaking for the preparation of our exhibits, and to make available to other museums the designs and techniques we will be developing.

Our Bicentennial plans will be developed in connection with those of other institutions in the Nation's Capital—such as the National Capital Parks, the National Archives, the Library of Congress. In this way we can hope to create here in Washington an experience that will be richer and deeper, but not less festive than that of a conventional exposition. All these efforts will help the Nation toward a celebration worthy of the 200th anniversary of our independence.

II. POPULAR PROGRAMS FOR THE BICENTENNIAL CELEBRATION

A. *The American experience: The era of the Revolution*

1. The continent and its people.—A major bicentennial exhibition depicting the American continent at the time of the coming of the Europeans—the early settlers and their impressions, the Indian tribes who inhabited the greater part of the territory, the animals, birds and aquatic life, the forests and the prairie land, the rivers and bays and life of the oceans of the East, South, and West. This will present a land, still in harmony between nature and man, before the benefits and detriments of a more industrialized society occurred to alter the landscape.

2. First encounter.—An exhibition showing the interaction of the European and Indian cultures: for example, in agriculture, the arts of war, in crafts, textiles, pottery, wood, and shelter needs.

3. Everyday life on the eve of the Revolution.—A number of exhibitions designed to project the viewer into the life of colonial America. These will be constructed so that they may be loaned to museums, colleges, and other similar institutions by SITES. Topics to be illustrated are: (a) *Three meals a day*.—The 18th-century American menu, food sources and preparation. (b) *The colonial community*.—The physical and governmental structure of towns, the services provided and the restraints imposed, and how they varied from colony to colony illustrated by artifacts and graphics. (c) *Building America*.—The tools, the architectural styles, including borrowed techniques and their New World modifications the colonists brought to public buildings and private homes. (d) *Colonial schooling*.—The development of the concept of public-supported education and how education and educational levels differed from colony to colony.

4. Colonial communications.—An exhibition on the significance of the colonial printer; colonial, British, and foreign newspapers; and their dissemination of news. Since printers were also postmasters this exhibition will feature both the isolation of the colonists and their interest in maintaining news from England and also from the other colonies. Attention will be given to the relations of problems of communication to the organization and conduct of the Revolution.

5. Colonial art.—The American visage as seen by the foreign-trained sophisticates and by the itinerant painters; New England sign painters; figureheads and scrimshaw; the topographic artists like Christian Remick; the naturalists, like William Bartram; historical printmakers like Paul Revere; cartoons and caricatures.

6. The signers of the Declaration of Independence.—An exhibition of as many of their portraits as extant and available, accompanied by publication of a catalog and of a more definitive study. The exhibit would aim to illustrate the great diversity of individuals involved in the writing and signing of this document, in terms of their backgrounds, occupations, personalities, and the fortunes of these men during and after the Revolution.

7. *The Citizen-Soldier of the Revolution*.—A living exhibition depicting the life of the American citizen-soldier, with emphasis on the Revolutionary War period. Live performances at the proposed Bicentennial Park near Washington will help the visitor learn (and enjoy learning) the role of the colonial militia,

will help him see what the soldier wore, what he ate, how and where he slept and how he was trained to fight. These plans also include old-fashioned military band concerts.

8. *The Portraits of George Washington*.—An exhibition (with appropriate catalogues) of life portraits, political cartoons, and cult images during Washington's lifetime down to the present. Also under consideration is telling the story of Washington's life based on these portraits—interspersed with associative material and footage shot on location.

9. *The Price of Independence*.—An exhibit of the risks and the opportunities of independence for the American colonists. The first part depicts the risks of sea trade, of potential civil war within and between the colonies, the fear of defeat and the human and fiscal costs of war, supplemented by the problems which would be developed from the loss of trade with England. The second part depicts the new opportunities found in Independence: a new national politics, the opportunity for free trade and free manufacture, new fields for intellectual endeavors, and the removal of British controls over westward expansion. A newly designed computerized game (developed by Prof. Edmund S. Morgan of Yale University) will allow the museum visitor to select one of several roles (such as that of a Boston merchant, a Philadelphia laborer, or a Southern planter) and test his decisions against the actual facts of history in the period 1770–1820. In this way he can relive the risks and opportunities of the Revolutionary Era.

B. The American experience: Two centuries

1. *The U.S.A.—A Nation of Nations*.—A major Smithsonian Bicentennial project is an exhibition to be called "A Nation of Nations." A planned two-part permanent addition to the National Museum of History and Technology will show by means of artifacts and the latest techniques of audio-visual communications: (a) the role of other nations in the development of the United States, and (b) America's contribution to the world.

The first portion—"From the Nations to a Nation"—will illustrate the ideas and physical objects brought to America by the first settlers and subsequent immigrant groups, ideas once alien to this continent, and the resulting melting-pot society that is America.

The second portion—"From a Nation to the Nations"—will display and explore the impact of the American experience on other countries. This will range from the ideas of the American Revolution through the political development of newer nations following America's philosophic leadership and including the effect of our technology and way of life on other cultures.

2. *The Corridors of American Experience*.—A series of "time corridors" will enable the visitor to experience daily living at specific points in America's past. Employing the most innovative concept in exhibits, the museum will surround the visitor by objects, sights, sounds, and smells of a particular historic moment: (a) 1750, just before the American Revolution; (b) 1850; and (c) 1950. A time machine will transport the visitor by novel means of surveying the intervening experience, from one time period to the next. The "time machine" is being developed and will be tested on the public by the close of fiscal year 1971.

3. *Man and Nature*.—A major exhibition of how the face of the American continent has been changed by the growth of this Nation during our 200 years: a historical perspective of agriculture and agricultural mechanization, of industrialization and urbanization, can provide a foundation for understanding the environmental problems of today. The exhibit will dramatize the problems and suggest possible and necessary measures for redressing the balance of man and nature.

4. *The World Above*.—The Smithsonian will present an exhibition on the history of man's exploration of the world overhead, from the first flight across the English Channel in 1785 through the Apollo XIII, and including Benjamin Franklin's kite and Robert Goddard's early research with rockets. The exhibition will also show, through pictures, graphs and objects, the development of satellite technology permitting better navigation in the air and on the high seas, more accurate weather forecasting, and the broadcasting of educational and entertainment programs for television.

III. RESEARCH, PUBLICATIONS, AND SCHOLARLY CONFERENCES

A. The Smithsonian Encyclopedia

The Smithsonian Encyclopedia is a Bicentennial project designed to provide an authoritative illustrated one-volume encyclopedia of American history, culture, life, and civilization. It will contain about 4,000 alphabetically arranged

articles totalling 1,250,000 words and about 1,200 pages of text. The Smithsonian Encyclopedia will offer the American people for the first time an inventory of the remarkable range of American achievement. It will include all the usual topics—Presidents treaties, battles, legislation, and literary classics in addition to thousands of others (Coca Cola, comic strips, corporate lawyers, dictaphones, hotel, quick lunch, safety pin, typewriter, and so forth) for which there is no other accessible authoritative source. About half of the entries will not be found in any other encyclopedia. The articles (prepared under the direction of the National Museum of History and Technology), will be written and edited by leading authorities in each area. Americans then will have a new opportunity, in a single volume, to explore and understand many of the items which make up the American way of life.

B. Symposiums and conferences

An international symposium in 1976 will reexamine the traditional national goals—life, liberty, and the pursuit of happiness—in the light of the profound technological, scientific, and ideological changes that have transformed the Nation in its two-century experiment. This country's preeminence in technology has indirectly broadened its citizens outlook on their country and the community of nations on this planet. The successful exploration of the moon has moved us conceptually beyond our national frontiers and to think of an interplanetary universe. Scientists working in the Smithsonian are already participants in a worldwide network of collaboration with men seeking knowledge about outer space, and the origins of life itself. The values suitable to such a revolution are a fulfillment of the universal outlook of our Founding Fathers.

Contemporary concerns with finding a balance between world food and population ratios, and in what individuals can do to fight pollution and improve the quality of life are problems faced by all societies since man began to cultivate the land and domesticate animals. Today differs from the past with our realization of the finite nature of our planet's resources. Unlike people of this country who were concerned with pollution and vanishing wild life 200 years ago, concern today is not enough and the Smithsonian is deeply committed to providing a forum for the discussion of possible solutions and hopefully their successful application.

C. Research in the sciences

Much of the Smithsonian Institution scientific research is concerned with environmental problems or human ecology. The improvement of the environment by the curtailment of pollution and the establishing of more equitable balances between man and nature are stated goals of the American Revolution Bicentennial Commission.

IV. TO ASSIST MUSEUMS AND OTHER INSTITUTIONS HERE AND ABROAD

A. National Museum Act of 1966

Under this Act, the Smithsonian assists and cooperates with other museums of the country in solving their problems and promoting their programs. Pursuant to this program the Smithsonian will help museums in this country and abroad to develop their programs for the Bicentennial.

B. Smithsonian Institution traveling exhibits service

The SITES program of the Smithsonian Institution is uniquely suited to aid in developing public awareness and understanding of the broad nature of this Nation's Bicentennial celebration.

Already circulating in the country to museums, universities, schools, banks, and other public institutions are some 120 exhibits from both foreign and domestic sources. Beginning in mid-1970, a series of exhibits, developed within the Smithsonian Institution, will travel throughout the Nation illustrating the different aspects of this celebration. Featured will be the historical events of the Revolutionary period, daily life in the 1770's, the continuing problem of misuse of resources and deteriorating environment and our unique American experience and its elements. These exhibits should provide both opportunity for people to see fully the nature of the Bicentennial celebration and its concern with the whole 200 years of American life and stimulate interest to participate in this celebration.

C. Handbooks and other services

The Smithsonian Institution is cooperating with the American Association for State and Local History in preparing a "Handbook for Bicentennial Exhibition Planning" for distribution to the association and other interested persons. Similar cooperative projects with other associations are planned.

D. International exhibitions

The Smithsonian will cooperate with the embassies of France, Great Britain, Spain, the Netherlands, and other countries to develop exhibitions in their national museums, conferences, and other activities for the Bicentennial.

THE SMITHSONIAN'S BICENTENNIAL PROGRAM

Dr. RIPLEY. We are very much encouraged by the plans, and the kinds of encouragement we have been receiving from the Executive Branch, and in the past years from the Congress. We must prepare for some 30 million Americans who are going to come to Washington in 1976. We hope at that point to have a coordinated exhibits and demonstration program right across this city involving every one of the institutions that exists and that is on the spot. We would like a bicentennial program to be a dignified and appropriate one to remind Americans of what the American experience has been, and to try to project where we are going. We are not so much interested in a carnival or a vast expenditure of a world's fair type. What we are really interested in, in this rather sobering period of American life, is in trying to revitalize the spirit of young Americans, and make them proud of what we have, and make them ambitious and hopeful for the future. And we plan to do it not in a tawdry, overnight way, which will have very superficial impressions on them, but to do it in a positive and really stimulating way. We think that we can do some of it by marshaling the resources that are already here, and simply demonstrating them in the appropriate way. This sounds relatively low keyed, but we are low keyed in this. We are worried about where Americans are going, and we are worried about their forgetting the roots and the heritage that they have. So we take a very deep and a very serious point of view in this regard.

SCHOLARSHIP AND HIGHER EDUCATION

We are hoping this coming year to receive support from the Congress for our academic programs. We are particularly conscious of the fact both in foreign projects using counterpart funds and also in educational projects right here in Washington, that there is a tremendous need as expressed in the demands that we receive for help by scholars. I know that there has been a very considerable decrease in the level of Government support for scholarship and for higher education in this country in the past 2 years, and a great deal of concern for scholarship.

We feel at least that there are many areas in our special competence where we can help to provide needed guidance and assistance, and I would, if I might, like to submit for the record a brief statement here about our academic programs. This shows some of the things that we have not been able to do because of lack of funds, but which we feel are cogent and valuable and useful for the future.

Mrs. HANSEN. Please do.

(The information follows:)

INTRODUCTORY REMARKS FOR ACADEMIC PROGRAMS TEXT AND ATTACHMENTS

I respectfully submit that investments in our academic programs merit your approval and the increase of \$75,000 we have requested. The Institution serves as an auxiliary to education at all levels. I hope that members of the committee will be aware that we do our utmost to realize important benefits for young people from the facilities and programs committed to our care. We constantly strive for higher quality and more effective returns for students visiting the Institution directly and also for schools and colleges in the subject areas of our interest. I wish to report a number of examples of excellent proposals made to us by students who would have benefited greatly from support, but which we have had to refuse because the present level of funding is inadequate. We can provide about 50 stipends from our present appropriation. I recommend that this level be increased steadily to a level more nearly in keeping with the range of basic disciplines to be served (nine disciplines; 450 professional staff members) and the strong interest which the university community continues to show (200 completed applications received during fiscal year 1970 for the coming year).

EXAMPLES OF VISITING STUDENT PROJECTS REFUSED SUPPORT FISCAL YEAR 1970

A student at the University of California at Santa Barbara who will receive his doctorate in March of 1970 proposed to study the systematic biology and host-parasite relationship of octopod mollusks of the eastern Pacific. Increased interest in octopods and their growing use as experimental animals is handicapped by the lack of knowledge about their characteristics as hosts and about their parasites as well. The objective is to achieve deeper conceptual understanding of interrelations among marine animals, through combining systematic and ecological studies, with the unique and extensive Smithsonian Institution intellectual and material resources in parasites, cephalopods and oceanographic studies. His academic supervisor and Smithsonian professional staff agreed that the conduct of this research at the Smithsonian Institution would provide an inimitable opportunity for achievement of the student's research and educational objectives, as well as to contribute stimulation and knowledge to existing Smithsonian Institution research activities.

A sedimentologist holding the doctorate from Dalhousie University and currently carrying out independent research at the Smithsonian proposed to continue the work which he initiated in the past 6 months. His study concerns the sedimentary deposit of Mesozoic and recent age occurring as capping continental margins in the Atlantic and Indian Oceans. Their origin and the evidence they may yield for the origin of continents make them a subject of continuing vital interest. Various techniques to analyze wedges of these sediments would be employed, directed toward interpretation of the sediments studied (eastern U.S. continental slope) and other similar sediments of widespread occurrence. The research subject is of direct interest to Smithsonian Institution professional staff and would complement and enhance ongoing research, as well as broaden the researcher's own competence, and prepare him to return to his native India to fill a void in that nation's research competence in marine geology, particularly deep sea sedimentology.

A student at the University of Kansas who will receive her doctorate in June of 1970 proposed a comparative study of food resource partitioning in insular and continental anole lizards. The purpose is to study the intensity of competition for food resources when anoles form a "trophic block" of species and individuals in an insular population contrasted with competition for food resources under continental conditions in which the anoles comprise a smaller part of the fauna. The objective is the expanded understanding of principles underlying predator-prey relationships, a key concept in ecological theory. The strong support of her university advisers was predicated on the significance of her research for the understanding of tropical ecosystems as well as deepening her awareness of the relationship between fieldwork and laboratory and theoretical ecological research.

A student at the University of Sydney, Australia, who will receive the doctorate in experimental agricultural biology in early 1971 proposed interdisciplinary research in the history of ecological science. His objective is to investigate the history of certain scientific ideas as they have affected the theory

and experimental practice of modern ecology and population biology. His particular emphasis would have been on the application of the axioms of population dynamics and mathematical demography to questions previously studied without success through the static modes of conventional plant ecology. The development of studies in the history of ecology could be well supported at the Smithsonian Institution through the exploitation of the resources of numerous professional staff members and would stimulate thinking in an area of particularly timely interest to scientists and humanists. The student's varied background, with training in agricultural sciences and in history and literature, combined with his wide-ranging interest in contemporary problems would have made him a most suitable addition to the intellectual life of the Smithsonian.

A student at Harvard University who will receive his doctorate in September of 1970 proposed to study nest building by social wasps at the Smithsonian Tropical Research Institute from a base in Cali, Colombia, emphasizing the evolution of nest building behavior and its adaptive significance for individual species and for the phylogeny of the social vespids. Few details are known of nest building behavior, which the field observation associated with the project would help to correct. The larger benefits of this study would be to illuminate obscure areas of social behavior among wasps. The proposal was strongly supported by the student's university professors particularly because of his capacity for original field work and experimentation and the suitability of the location for the study, and because of its major importance in the sophistication of his field experience in the study of social wasps.

A student at Syracuse University, who will receive his doctorate in August of 1970, proposed research in the mechanisms of energy transduction by molecular structures in living systems, specifically as mediated by the widespread plant pigment phytochrome. The determination of the primary structure of phytochrome would increase the knowledge of the molecule's chemical topography, making possible the investigation of sites and mechanisms of its activity in organisms. The research would have been conducted at the Radiation Biology Laboratory whose professional staff judged it particularly well designed to achieve experimental results, to complement the student's experience in other phases of protein biochemistry, and to contribute to current research.

A Ph.D. candidate at Yale University has proposed a research project to analyze evolutionary trends through studies of form and function in both living and fossil crinoids, a class of marine invertebrates. He has determined that phenomena of structural changes may provide a basis for understanding success and failure in the way organisms respond to environmental pressures. The largest fossil echinoderm collection in the world is housed in the National Museum of Natural History; this student could have found no better place to work on the fossil material pertinent to his study. He also proposed to go to the Smithsonian Tropical Research Institute to study living related organisms. Thus jointly these two Smithsonian facilities could have given this student unique access, as well as supervisory guidance, to the resources he needs in his attempt to bridge the gap between the present and the past.

Our academic programs reinforce the Institution's efforts in research by training students in our unique and specialized fields of inquiry. Thus they complement and do not duplicate the efforts of universities. It is clear from a list of projects that these investigations are very valuable in their own right and represent an extraordinary range of effort for what is really a small investment relative to the cost of our facilities and staff research.

FISCAL YEAR 1970 STIPENDS FOR HIGHER EDUCATION PROGRAMS

(Full-time appointments of 3 months or more)

National Museum of History and Technology

¹ JEREMY, David John, University of Delaware; the transit of textile skill and technology between Britain and the United States, 1783-1830/40; Philip W. Bishop, supervisory; department of industries.

LUNT, C. Richard K., Indiana University; the history of American traditional small boat building; Howard I. Chapelle, department of industries; Ralph Rinzier, division of performing arts, supervisors.

¹ Surnames of postdoctoral investigators are given in capital letters.

- McCUSKER, John J., University of Pittsburgh and University College; Philadelphia shipping, 1722-76; a statistical study; Melvin H. Jackson; department of industries.
- McKEE, Linda M., Washington University; Commodore Isaac Hull, 1773-1843; Howard I. Chapelle; department of industries.
- STECHL, Peter, University of Wisconsin; biological standardization of drugs after 1928; Sami K. Hamarneh; department of science and technology.
- TUCKER, Spencer C., Texas Christian University; completion of a history of muzzle loading naval ordnance; Melvin H. Jackson; department of industries.
- ZANGRANDO, JOANNA S., George Washington University; monumental bridge design in Washington, D.C., as a reflection of American culture, 1886-1932; Robert M. Vogel; department of science and technology.
- BANTA, William C., University of Southern California; a comparative morphological and developmental study of frontal walls of some ascoporan cheilostome Bryozoa; Alan Cheetham; department of paleobiology.
- COBB, Stanley J., University of Rhode Island; brain morphology in sternoptychidae and gonostomatidae; Stanley H. Weitzman; department of vertebrate zoology.
- DAHL, Arthur L., University of California at Santa Barbara; phycological review and standardized data collection of marine floras; Mason E. Hale, supervisor; department of botany.
- FEININGER, Tomas, U.S. Geological Survey; metamorphic facies and facies series of the Andean metamorphic belt in Colombia; George Switzer; department of mineral sciences.
- GAUTIER, T. GARY, University of Kansas; Leonardian nonfenestrate cryptostomes from the Glass Mountains, Tex.; Richard S. Boardman; department of paleobiology.
- GODDARD, R. H. Ives III, Harvard University; Algonquian linguistics, ethnography and ethnohistory; William C. Sturtevant; office of anthropology.
- GOODYEAR, Richard, George Washington University; systematics and zoogeography of the deep sea fish family Malacosteidae; Robert H. Gibbs; department of invertebrate zoology.
- GRIFFIN, Desmond J. G., Australian Museum; systematics of Indo-West Pacific crustacea Brachyura; Raymond B. Manning; department of invertebrate zoology.
- HINDS, ROBERT W., Columbia University; morphology and systematics of the Bryozoan genus *Idomonea* from the eocene and oligocene of Mississippi, Alabama, and western Florida; Richard S. Boardman; department of paleobiology.
- HUANG, Ter-Chien, Florida State University; the origin, nature, and transport processes of the sediments between shelf edge and continental rise; Daniel J. Stanley; department of paleobiology.
- Kerby, Catherine Jane, George Washington University; Life history study of *Sabella microphthalmia*; Meredith L. Jones, supervisor; department of invertebrate zoology.
- Lewis, Jackson S., Tulane University; A study of genus *Calappa* as represented by the recent species in the Smithsonian Institution collections and by Miocene fossils from Florida; Fenner A. Chace, Jr.; department of invertebrate zoology.
- Noonan, Gerald R., University of California at Riverside; Revision of the subtribe Anisodactylina; Paul J. Spangler; department of entomology.
- Thonglongya, Kitt, Applied Science Research Corporation of Thailand; Taxonomic revision of the bats of Thailand; George E. Watson; department of vertebrate zoology.
- Zaretsky, Irving I., University of California at Berkeley; Spiritualist movement in the San Francisco Bay Region, 1880-1965; William C. Sturtevant; office of anthropology.
- Chesapeake Bay Center for Environmental Studies*
- Williamson, Penelope, Johns Hopkins University; The foraging ecology of the starling; George E. Watson; department of vertebrate zoology.
- Radiation Biology Laboratory*
- Morton, Dorothy J., George Washington University; Developmental physiology of the grass seedling with special reference to effects of light on corn; Robert L. Weintraub; radiation biology laboratory.

Smithsonian Astrophysical Observatory

- Brady, Leslie Ray Jr., Brandeis University; Electron screening in thermonuclear reactions and its effect on the rates of reactions in stars; Henri Mitler, supervisor; professional staff member.
- Carbon, Duane Francis, Harvard University; Theoretical studies of non-grey model atmospheres for stars of intermediate and late spectral types; Owen Gingerich; professional staff member.
- Cheng, Chung-Chieh, Harvard University; Theoretical studies of the flux and energy spectrum of gamma radiation from the sun; Giovanni Fazio; professional staff member.
- Chipman, Eric George, Formation of strong lines in the solar atmosphere; E. H. Avrett; professional staff member.
- Duerr, J. Stephen, Massachusetts Institute of Technology; Formation of Plesite in metallic meteorites; Charles Lundquist; professional staff member.
- Forman, William R., Course work in astronomy; R. Southworth; professional staff member.
- Grindlay, Jonathan Ellis, Harvard University; Cosmic X-rays and their detections with Smithsonian's 10-meter reflector at Mount Hopkins, Ariz.; Giovanni Fazio; professional staff member.
- Kurucz, Robert Louis, Harvard University; Research in model atmospheres; Wolfgang Kalkofen; professional staff member.
- Leibowitz, Elia M., Harvard University; Interstellar gas; Charles Lundquist, supervisor; professional staff member.
- Rieke, George Henry, Harvard University; Gamma-ray astronomy; Giovanni Fazio; professional staff member.
- Simon, Theodore, Harvard University; The chromospheric structure of Arcturus; E. H. Avrett; professional staff member.
- Stephens, Timothy Lee, Harvard University; Atomic and molecular physics with applications to astrophysics; A. Dalgarno; professional staff member.
- Veverka, Joseph Harvard University; Photopolarimetry of satellites and minor planets; Fred Whipple; professional staff member.

Smithsonian Tropical Research Institute

- Foster, Robin B., Duke University; Fruiting strategy in a lowland tropical forest; A. Stanley Rand, professional staff member.
- Gliwicz, Zbigniew M., University of Warsaw; Hydrobiology of tropical lakes; Martin M. Moynihan; professional staff member.
- Hespenheide, Henry A., III, University of Pennsylvania; The ecology of tropical insectivorous birds and their insect prey; Martin M. Moynihan; professional staff member.
- Kropach, Chaim N., New York City University; The biology and population structure of the Eastern Pacific sea snake; Ira Rubinoff, supervisor; professional staff member.
- Miller, Bruce A., University of New Hampshire; Biology, ecology, and systematics of the Terebridae; Peter Glynn, Harald A. Rehder, Joseph Rosewater; professional staff members.
- Ogden, John C., Stanford University; Stratification and resource partitioning in coral reef fishes; Ira Rubinoff; professional staff member.
- Todd, Eric S., University of California at Santa Barbara; Ecophysiology of some air breathing gobiid and gobiococid fishes; Martin M. Moynihan; professional staff member.
- Zaret, Thomas M., Yale University; Seasonal variations in tropical freshwater environments; Martin M. Moynihan; professional staff member.

Other units

- Baker, Joanne, Georgia Washington University; Tombstones as a reflection of American culture; Wilcomb E. Washburn; American studies program.
- Guralnick, Stanley M., University of Pennsylvania; Science education in 19th century America; Nathan Reingold; Joseph Henry Papers.
- Lewis, Emanuel Raymond, History of American sea coast fortification; John H. Magruder; National Armed Forces Museum Advisory Board.
- Pursell, Carroll, Jr., University of California at Santa Barbara; Technical mobilization in World War I; Nathan Reingold, supervisor; Joseph Henry Papers.

- Seger, Jon, University of California at Santa Barbara; Study of the use of audiovisual materials and museum exhibits in environmental education; Nathaniel S. Dixon, Office of Academic Programs.
- White, Dana F., Suny at Buffalo; A systems study and area analysis of the physical city, Washington, D.C.; Wilcomb E. Washburn, American studies program.
- Wing, William G., Comprehensive study of drug use Special Program in Popular Education; Philip C. Ritterbush; Office of academic programs.
- Works, Robert N., Yale University; Studies in aspects of museum administration and a study in the history of American art; Marvin Sadik; National Portrait Gallery.

I wish to offer two descriptions of very talented individuals now conducting research under our higher education programs to show in more detail the relationship between their work and Smithsonian research.

A Ph. D. candidate from the University of Kansas (Lawrence, Kans.), currently holds a predoctoral fellowship award (visiting research associate) in the Department of Paleobiology at the Smithsonian Institution for the academic year 1969-70. As a graduate student at the University of Kansas, he developed a research interest in the taxonomic status of the Upper Paleozoic bryozoan genus *Tabulipora*. His research with this genus was concerned with the evolutionary significance of certain morphological changes which occurred during Upper Paleozoic time. The study has been conducted at the University of Kansas, and more recently at the Smithsonian where large collections of *Tabulipora* have been made available to him by Smithsonian scientists who are currently conducting programs of research involving the evolution of bryozoa. The results of his study will be published as a part of the "Treatise on Invertebrate Paleontology." At the present time the student, under the direct supervision of Dr. Richard Boardman, curator of invertebrate paleontology is studying the detailed morphology of Permian bryozoa. This program is particularly well suited for study at the Smithsonian because the student is able to examine the Institution's unique collection of silicified bryozoa from the Glass Mountains of West Texas. The opportunity to compare specimens that have been replaced by calcium carbonate, along with specimens replaced by silica, will enable him to evaluate previous work on a little studied group of animals. It will also permit him to develop for the first time some of the evolutionary relationships of Permian bryozoa, which have been studied in Australia, Asia, Greenland, and the U.S.S.R., but which have received little study in North America. It is expected that an important new understanding of the size, shape, development, and distribution of ancient bryozoan colonies and their relationships with living bryozoan genera will result from his study. The consequent ability to classify these bryozoa and to compare them with one another on the basis of small morphological features will allow biostratigraphers to establish a well-defined concept of the geology of such petroleum producing areas as the Permian Basin of West Texas.

This student's research activities at the Institution are in close harmony with the research objectives of the Division of Invertebrate Paleontology, which reflects an exceptional staff interest in the study of bryozoan genera as exemplified by a "Bryozoan Seminar" conducted twice a week on a year round basis. The value of this appointment can be considered both in terms of furthering the student's immediate academic goals (a Ph. D. degree) through access to staff and facilities (collections and libraries) which are not available elsewhere, and as contributing directly to a current research activity of the Institution through thoughtful and constructive participation in its programs. Further, the publications resulting from this student's activity at the Institution will broaden our concepts of important segments of past and present environments. The publications expected are: "Functional Morphology and Taxonomy of the Bryozoan Genus *Tabulipora*" (in press); Biological and Ecological Interpretation of Arborescent Bryozoa of the Treatise on Invertebrate Paleontology" (tentative title); and "Contributions to the Trepostome Chapter of the Treatise on Invertebrate Paleontology." Two other scientific notes are in preparation: "Less Expensive Micrography" and "Rapid Thin Section Production." After completing his appointment at the Smithsonian, this researcher plans to return to a uni-

versity to develop seminar courses related to his discipline and to encourage continued progress in his field through student research.

A doctoral candidate from Indiana University currently holds an academic appointment (Visiting Research Associate) at the Smithsonian Institution to study traditional small boat building in America, concentrating on several selected locations in New England. His study emphasized the historical development of the construction of small craft as a reflection of cultural and technological responses in maritime communities to the need for livelihood and for transportation.

The student employs in his research an approach which is well suited to be conducted at the Smithsonian, for it is closely related to two lines of research currently being pursued by investigators at the Smithsonian. This study of traditional small boat building requires a considerable knowledge of techniques for precise measurement, description, and reproduction of boat line, as well as knowledge of cultural implications of traditional technology and of fieldwork techniques in folkloric studies. In the former aspect the research complements the interest of the professional staff, and makes good use of the facilities of the Department of Science and Technology (National Museum of History and Technology) where, under the direction of Mr. Howard I. Chapelle, senior historian, a recognized authority on the history of American small craft development, the student is improving his competence in the technological aspects of his research. The museum's collections relating to small boats, together with Smithsonian library facilities, provide additional basic resources.

In the second aspect of his study, Mr. Ralph Rinzler, Director of Field Research Programs in Folklore (Division of Performing Arts) provides supervision and guidance in the interpretation of material culture represented by folkcrafts and in the development of his competence as a field investigator of cultural history.

The result of this particular research effort will be Ph. D. dissertation to be submitted to Indiana University in August, 1970. It is expected that the dissertation will be published in an appropriate professional publication. In addition to the educational value of the appointment to the recipient, the field work conducted by him in New England will produce informants and other resources to be used by the Institution in presentations and exhibits in the Festival of American Folklife planned for the Mall during the summer of 1970.

APPRECIATION OF SUPPORT BY THE CONGRESS

Dr. RIPLEY. I am very well aware, Madam Chairman, of the rate of support and encouragement that this committee and our Senate committee have given to the Institution in the last few years. I am very well aware also of the austerities of the present approach toward the budget process. I am reminded particularly of this, how shall I describe it, this ambivalence on the one hand, the support and friendship that we have received from our Congressional committees in the face of great austerity in the general budgeting process, by turning to the proceedings of a meeting held in 1927 in the Smithsonian. That meeting was called to discuss the future of the Smithsonian, at which President Coolidge's Director of the Bureau of the Budget, Mr. H. M. Lord, pointed out:

In spite of present efforts to economize in all directions, it has been the disposition of the Congress to increase appropriations for Smithsonian caretaking and museum activities rather than to diminish them.

Thereby, of course, putting increasing pressure on our own small private funds.

DECLINE IN PERCENTAGE OF FUNDING FROM PRIVATE SOURCES

It is interesting that in 1927 the Federal funds support for the Smithsonian, as part of its total budget, was 62 percent as against 38 percent from our private sources, income from endowments, gifts, and grants. This past year, in 1969, the direct Federal appropriation was 68 percent of our total budget, and only 32 percent was the endowment, gifts, and grants program. So we are slightly down, and I suspect we are more down this year because of the agency support we get in grants, which has continued to decline markedly during the past few months.

DEVELOPMENT OF AN ASSOCIATES PROGRAM

I should express that we are most grateful to the Congress for the support that we have received in our museum and our public instruction and public exhibition efforts, but we are continually concerned by the pressure this brings on our private funds. It erodes our private funds a bit, and it is for this reason really that we have been so strongly trying to develop the program of the associates, the national associates, to bring the Smithsonian into the open, as it were, to increase private support for the Institution.

In 1927 at that committee meeting, the President, Members of the Cabinet, Members of the Congress, the Regents including members who were business leaders in the community in the United States voted at that time to start a development program for the Smithsonian. Unfortunately the death of one of my predecessors stopped the whole thing.

He died just at the time when it should have been carried on, and the impetus was lost. If we had only developed that program in 1927, we would have been in a far better position to weather through the kinds of austerity that came with World War II, from which we have only just been in recent years beginning to recover.

I mention this because I think the history is interesting, that the Smithsonian does its best and will do its best to attempt to develop appropriate sources of private support, in order to meet the challenge that your committee set for us, with your welcome, interested, and concerned support.

INCREASED APPROPRIATIONS LARGELY OFFSET BY INFLATION

I think that the record of the past 2 years shows that we have received support considered to be measurably significant, about 10 percent each year. These are generous increases, but about 56 percent of this growth was to cover the costs of higher Government salaries, and another 17 percent was connected with pay related support and price inflation in various types of museum purchasing activity.

Cost-of-living raises, pay support, and so on have put us under a tremendous strain, in spite of these demonstrable efforts by the Congress to reimburse us, as it were. Now that we are unionized, I find that our workers are complaining about the rates of hourly pay for work that they are expected to perform, the kinds of clothes, the kinds of luncheon breaks that they have. We can expect a very considerable added stress and strain in the immediate future. We have no way of knowing to what extent we can be reimbursed for this pay raise, which is in effect now virtually assured, and we may end up in a serious situation by the end of this fiscal year. And so I don't know what to do. I throw myself on your counsel, because we are expecting to have very austere times ahead. It is in this general tone of gratitude for what the committees have done for us, and at the same time concern for the immediate future, that I would like to close my opening remarks, Madam Chairman.

Mrs. HANSEN. Thank you very much, Dr. Ripley. Every agency this committee has reviewed is in a similar situation. For instance, it has been very interesting to note what effect a 1 cent increase in the postage rates will have on a department.

The average taxpayer does not realize that each agency of Government is charged for its postage. They think that because the mail is franked that it is a free service. It is not free.

JUSTIFICATION MATERIAL

Please insert pages 1 through 4, of the justifications in the record. (The pages follow.)

SMITHSONIAN INSTITUTION
GENERAL STATEMENT
FISCAL YEAR 1971

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 American "to found at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men."

Since 1846, the Institution has devoted its resources to basic research, public education, and national service in science, the humanities, and the arts. Its museums, galleries, and scientific laboratories are national institutions with commitments in broad fields of scholarship and education. The Institution's physical facilities for research are extensive and its collections constitute a unique resource for research in a number of disciplines, scientific and humanistic. The research staff of over 300 professional scholars and scientists works in the fields of American history, anthropology, astronomy and astrophysics, botany, art history, entomology, the history of cultures and technology, marine and terrestrial biology, mineral sciences, and paleontology. Much of their effort is interdisciplinary, emphasizing evolutionary and behavioral themes leading to a better understanding of man and his relationship to his surroundings. Over the past century, hundreds of students, guest research scholars, collaborators, and associates in cooperation with Smithsonian staff have successfully completed significant projects, establishing a tradition for the Institution. Their work may be viewed collectively as a leading contribution to our intellectual heritage. The Smithsonian's exhibit programs and related performing art presentations attract millions of visitors from all over the world to view the artistic, cultural, and technological achievements of the country and its peoples.

The Smithsonian administers five museums, a zoological park, five art galleries, seven other research laboratories and scientific centers, a number of associated national and international programs, and several administrative and central support activities. It is responsible for the maintenance, operations, and protection of eight major exhibition buildings and nine support facilities in the Washington area, a major astrophysical observatory with headquarters in Cambridge, Massachusetts, and a worldwide data gathering network, and a facility for tropical research centered in the Panama Canal Zone.

In the decade of the 1970s, the Institution has a number of closely related program objectives:

- To study and explain areas of science and the humanities which can increase man's knowledge and understanding of his environment as well as of himself.
- To achieve integration and mutual reinforcement within our arrays of reference resources of collections, books, and information services.
- To devote an increasing measure of time and effort to studies of cultural development and technological change and to improved educational displays bearing upon this theme.

The budget increases requested for fiscal year 1971 are presented in the following three sections:

- "Salaries and Expenses": increases for carefully selected regular operating programs (museums, galleries, laboratories, and support offices); and special programs to prepare for the celebration of the Bicentennial of the American Revolution, and to make significant contributions to increase man's knowledge of the environment.
- Special Foreign Currency.
- Restoration and Construction of buildings and facilities.

"Salaries and Expenses"

The President's Budget allows the Smithsonian to seek an increase in its "Salaries and Expenses" appropriation of \$6,902,000 over a revised base of \$29,465,000 for a total of \$36,367,000. Of this increase, \$3,125,000 represent the appropriation request for the National Zoological Park. The Administration has requested the Institution to assume responsibility for the operating budget of the Zoo since it too is a national exhibition resource. The balance of the requested increase, \$3,777,000, includes \$400,000 to help meet the higher pay costs of current employees, and \$3,377,000 for program improvements. Difficult choices have been made to match this increase against the greatest needs. All but our most essential funding requirements have been deferred. No additional program funding is being requested for 15 of our operating bureaus and support activities. We have attempted to consolidate and direct our requested program increases to the following activities which we believe will result in the greatest return to the public.

Increasing Man's Knowledge and Understanding of Himself and His Environment

At the Smithsonian, we seek to study and hope to explain areas which can increase man's knowledge of his environment as well as his knowledge of himself. From this point of view of environment, the single most important need of our society today is to understand the patterns and the functioning of ecosystems. Man must learn to live in harmony with the biosphere, that small existing envelope of available land, water, and air which allows him to exist. On this understanding, man's physical and cultural future depend.

For over 100 years, Smithsonian scientists and research collaborators have studied the earth, its inhabitants, and the vast spaces that surround this planet. Ten research laboratories and program support activities are actively engaged in investigations on the complex components of this system and how they affect one another.

For fiscal year 1971, the Smithsonian is requesting additional funding in the amount of \$1,350,000 for improved basic research, documentation, and education related to environmental assessment, monitoring, and prediction.

Integration and Mutual Reinforcement of Reference Resources

The Institution possesses an array of reference resources tracing man's physical, cultural, and technological development which is unmatched anywhere in the world. Our data bank of biological specimens may turn out in a hundred years to represent four or five times the genetic diversity then available to us, for by that time 75 to 80 percent of the species of living animals or plants may be extinct. The possession of these objects and data has enabled the Institution to perform research, produce exhibits, and publish basic reference works that have set standards in many fields of the natural and physical sciences and the humanities. It must continue to fill these national responsibilities in new and challenging ways.

Five years ago, the Institution first began to explore ways of developing its information resources to make them more accessible and useful, both for the needs of today's researcher as well as his successors. While some progress has been made, much more needs to be done in assembling this reference material for useful investigations. We are purposefully seeking ways to arrange our information resources so that each reinforces the others to the maximum practical extent. Not books separate from objects; not specialized information services separate from either; but rather integrated reference systems which can unite all three.

For fiscal year 1971, the Institution is seeking an additional \$455,000 to continue this development work.

Studies and Displays of Cultural and Technological Development

In earlier times, nature was considered an enemy which had to be hacked, burned away, and pushed back in order to provide a setting for the proper development of civilization. Unfortunately, mankind never developed measures which would reveal whether or not his culture and his environment were ever competing with each other on terms of rough equality. Evidence seems to be mounting in our cities, our forests, our oceans, and our remote and barren regions that our material culture is not only dominating nature, but is in the process of overwhelming it.

As a nation, we have developed the knowledge and the capability to deal with many technological and economic priorities. Very little effort, however, has been devoted to demonstrating the delicate balance between nature and culture and the need to deal successfully with problems in these areas. Smithsonian research and exhibits will give increasing emphasis to man's survival in a rapidly changing environment. It is very important to provide to the public, especially to the younger generation, an understanding and appreciation of man's cultural background and how his artistic efforts and technological advances have contributed to the development of civilized life and what the future may hold. Preparations for the celebration of the 200th anniversary of the United States must give attention to reassessing ideals, reviewing national achievements, and placing in perspective the ethnic, cultural, and religious diversity which have consistently contributed to our country's development.

For fiscal year 1971, the Smithsonian is requesting \$1,125,000 for the preparation of new art galleries and museums, for developing experimental exhibits for greater educational impact, and for preparations for the commemoration of the Bicentennial of the American Revolution.

An additional \$447,000 are requested for administrative and central support services and for the maintenance, operation, and protection of buildings.

Special Foreign Currency Program

Provision has been made in the President's Budget for the Smithsonian to seek an increase of \$2,184,000 in its Special Foreign Currency Program for a total of \$4,500,000 in order to meet the increasing number of requests of American institutions. The need is to provide adequate support, without any dollar drain to the nation, for overseas archeological work, systematic and environmental biology, astrophysical studies, and museum programs of benefit to American institutes of higher learning. Ongoing research, based on a progressively broader authority to employ these funds, now consumes the entire appropriation. New demand, spurred by diminishing dollar funding of basic research and by greater research opportunities abroad, is intense. This program is showing important results in cultural and biological studies that are both timely and pertinent to many of the problems man is now facing.

Construction

The Smithsonian's construction requests for fiscal year 1971 consist of only the most essential improvements and additions to the physical plant of the Smithsonian.

The request for Construction and Improvements, National Zoological Park, amounts to \$200,000. This is for funds for repairs and continued maintenance to keep those buildings and exhibits which will be replaced eventually in usable condition.

Included in the request of \$1,130,000 for the Restoration and Renovation of Buildings are a number of projects to complete work in progress or to repair and make better use of existing facilities. Included in the request are: \$300,000 to complete the Renwick Gallery of Art; \$500,000 to construct second floor decks in the 90-year-old Arts and Industries Building to provide needed work space; \$25,000 for continuing emergency repairs to deteriorating buildings at the Smithsonian Tropical Research Institute; \$75,000 to construct a fumigation facility in the National Museum of Natural History; \$50,000 to modify space in the Museum of Natural History Building for use by the Libraries; \$80,000 for the preparation of plans and specifications for an off-Mall museum storage and study facility; and \$100,000 for feasibility studies.

An appropriation of the remaining \$8,897,000 is requested to liquidate the balance of the contract authority for the construction of the Joseph H. Hirshhorn Museum and Sculpture Garden. This building will be under construction in fiscal year 1970.

With the continued support of the Congress, the Smithsonian will work energetically to improve its performance in those areas of research, education, information dissemination, and exhibits that seem of special timeliness in the new decade.

TABULATION OF BUDGET ESTIMATES AND APPROPRIATIONS

Mrs. HANSEN. Please insert in the record a tabulation of your budget estimates and appropriations for fiscal years 1960 through 1970.
(The information follows:)

TABULATION OF BUDGET ESTIMATES AND APPROPRIATIONS

"SALARIES AND EXPENSES"

Estimates		Appropriations	
1960	\$7,718,000	1960	\$7,718,000
1961	7,768,000	1961	7,768,000
1961 Pay Supp	346,000	1961 Pay Supp	346,000
1962	9,275,000	1962	9,125,000
1963	11,354,000	1963	10,900,000
1963 Pay Supp	169,000	1963 Pay Supp	160,550
1964	13,324,000	1964	13,124,000
1964 (Supp.)	67,000	1964 (Supp.)	67,000
1965	14,794,000	1965	15,000,000
1965 Pay Costs	540,000	1965 Pay Costs	540,000
1966	20,865,000	1966	18,468,000
1966 Pay Costs	453,000	1966 Pay Costs	453,000
1967	23,437,000	1967	22,523,000
1967 Pay Costs	176,000	1967 Pay Costs	176,000
1968	25,100,000	1968	23,913,000
1968 Pay Costs	472,000	1968 Pay Costs	427,000
1969	27,130,000	1969	25,748,000
1969 Pay Costs	695,000	1969 Pay Costs	695,000
1970	28,955,000	1970	28,134,000
1970 Pay Costs	1,431,000		
1971	36,367,000		

MUSEUM PROGRAMS AND RELATED RESEARCH
(SPECIAL FOREIGN CURRENCY PROGRAM)

Estimates		Appropriations	
1966	\$1,300,000	1966	\$1,300,000
1967	5,700,000	1967	2,316,000
1968	6,100,000	1968	2,316,000
1969	6,000,000	1969	2,316,000
1970	4,500,000	1970	2,316,000
1971	4,500,000		

CONSTRUCTION AND IMPROVEMENTS,
NATIONAL ZOOLOGICAL PARK

Estimates		Appropriations	
1963	\$950,000	1963	\$1,275,000
1964	1,736,000	1964	1,275,000
1965	1,776,000	1965	1,525,000
1966	1,539,000	1966	1,539,000
1967	1,589,000	1967	1,589,000
1968	485,000	1968	400,000
1969	660,000	1969	300,000
1970	600,000	1970	600,000
1971	200,000		

RESTORATION AND RENOVATION OF BUILDINGS

Estimates		Appropriations	
1966	\$2,248,000	1966	\$2,248,000
1967	2,300,000	1967	2,300,000
1968	1,353,000	1968	1,125,000
1969	1,200,000	1969	400,000
1970	755,000	1970	525,000
1971	1,130,000		

CONSTRUCTION

Estimates		Appropriations	
1968	\$803,000	1968	\$803,000
1969	14,197,000	1969	2,000,000
1970	^a 6,200,000	1970	^b 3,500,000
1971	8,897,000		

a Includes \$6,000,000 liquidation of contract authorization.

b Includes \$3,300,000 liquidation of contract authorization.

REMODELING OF CIVIL SERVICE COMMISSION BUILDING

Estimates		Appropriations	
1962	\$400,000	1962	\$400,000
1964	6,465,000	1964	5,465,000
1965	1,000,000	1965	1,000,000

NATIONAL AIR AND SPACE MUSEUM

Estimates		Appropriations	
1964	\$511,000	1964	\$511,000
1965	1,364,000	1965	1,364,000

INCOME FROM PRIVATE DONATIONS

Mrs. HANSEN. Also insert in the record your annual average income from private donations for application to Smithsonian activities. (The information follows:)

FISCAL YEAR 1969

The income from endowments and current fund investments was approximately \$1,400,000. Roughly one-half of this total was directed to the support of the Freer Gallery of Art. Of this amount, \$286,000 was spent on salaries and benefits, \$258,000 on purchases for the collections, and \$175,000 on research and other costs. An amount of about \$300,000 was restricted by the terms of the original gifts and bequests to other valuable endeavors in specific fields of research and education, such as the care of gift collections. The balance of approximately \$400,000 was unrestricted as to use.

In addition the Smithsonian received approximately \$2,300,000 in gifts and miscellaneous income, almost all of which was restricted to specific projects, such as purchases for the collections, and hence unavailable for general operating purposes.

SMITHSONIAN ACTIVITIES FOR THE INCREASE AND DIFFUSION OF KNOWLEDGE

Mrs. HANSEN. In 1846, James Smithson of England bequeathed his property to the United States of America to found an establishment "for the increase and diffusion of knowledge among men." This quotation on the purpose of the Smithsonian Institution, of course, prescribes an almost limitless sphere of activity. The Smithsonian Institution has made extensive progress since the days when its total activities were housed in "the little red brick building on the Mall." I think it would be well for you to summarize for the committee, in general terms, the extent of the various activities in which the Smithsonian Institution is engaged in today.

PROMOTION AND DISSEMINATION OF ORIGINAL RESEARCH

Dr. RIPLEY. I think it is extremely interesting to note the progress and development of the original idea which has been referred to from time to time consistently by every succeeding Secretary, the original idea of Joseph Henry, which was that the Institution, in order to carry out the mandate of James Smithson, had a tripartite role. First, there is the increase of knowledge, and I may say this original plan of his was adopted by the Regents in 1846. The increase of knowledge was determined to be the promotion by the Institution of original research, original studies in any field of knowledge that was thought to be for the betterment of the American people.

Second, the diffusion of knowledge would then consist of attempts, using the income of the Institution as it might be, to publish and disseminate these researches. Joseph Henry, of course, was concerned at the time with the fact that scholars in the United States were relatively few in number in a relatively smaller number of States, in a limited population, and their outlets for publication and circulation of their research were very limited as well. He saw the opportunity of putting these scholars in touch with their colleagues abroad, and in this way enriching the total scholarly production of the United States, getting a repercussion from abroad to this circulation, and

buffering it so that by increasing this communication, the scholars would know more about their particular fields, be able to do better work, and be able to increase the total volume of research, and the effect that it would have on the American people.

IMPORTANCE OF THE SMITHSONIAN'S SITE IN WASHINGTON

The third aspect of the work which he envisaged was the siting of the Smithsonian in Washington. He felt that it could be significantly the greatest cultural instrument in the United States, by being close to the seat of the Government, the Executive and the Legislative branches. By being in touch with these same scholars, it would be possible then to bring these elements together in a public forum, and have them discuss and communicate with each other, so that at all times knowledge would be in the freest interchange between these elements.

ASSUMPTION OF RESPONSIBILITY FOR PUBLIC COLLECTIONS

After a few years, the Government itself impressed very strongly on the Institution the necessity of taking over the public collections of objects possessed by the Government, many of which were housed in the U.S. Patent Office. After some resistance by Joseph Henry, in the early 1850's, the Smithsonian accepted this principle: That in addition to collections which might be its own privately, it would accept publicly donated collections, collections which had been donated to the United States. The Institution would accept the responsibility for housing, curating, and caring for them, but only if the government would support this work. As Henry said, if the income of the endowment were to be used for the support of the public collections, it would all be expended before any research had been accomplished. He considered that nothing was more uneconomic than attempting to run a museum collection, which by its very nature tended continually to increase. To the extent that he could, Henry and his successors have attempted to give away collections and exchange them with other museums so that we could more efficiently and appropriately house what we could and show what we could study.

This increase in diffusion of knowledge and exchange of knowledge still goes on, and is still the basic foundation for the Institution.

ESTABLISHMENT OF THE WEATHER BUREAU

It is true also that as time went on, the scope of this kind of increase and diffusion of knowledge changed and increased in itself, and it did so in very interesting ways.

For example, Henry was much concerned about the possibility that in America as a whole, it would be possible to determine and to predict weather, and some of his earliest research involved spending the private funds of the Institution in exchanging weather information. This eventually resulted in the Secretary himself pinning to the front door of the Institution every day a summary on weather conditions in the United States.

By 1870 the creation of the United States Weather Bureau, which had come into being as a result of Henry's initiation of this research, eliminated the necessity of the Smithsonian's worrying any more about

weather prediction and weather recording. It is a curious byproduct, Madam Chairman, that Henry's type of weather prediction was much more comprehensive than that undertaken by the Weather Bureau, which was largely taken up as an applied science. The basic research which he had wanted to conduct included all kinds of short range and short lived phenomena of the sort that here in 1968 and 1969 we are worried about. Although this was largely left out of the Weather Bureau, we are beginning to realize now that Henry was on the right track in the 1850's and 1860's, when he said that it was, indeed, important to know about many environmental changes that were taking place which should be put into the system. It is a fascinating corollary to the spinning-off of the Weather Bureau as an applied science, mission-oriented agency that the basic research aspect, which was part of Henry's original plan, was largely changed in the process. Some of it was left out, and some of it we are still concerned with and trying to bring it to the attention of scientists and scholars in this country.

Mr. REIFEL. It was more than just determining which way the wind was blowing.

EARLY SMITHSONIAN STUDY OF ENVIRONMENTAL DETERIORATION

Dr. RIPLEY. Right. By the 1870's Henry was very much concerned about two essential urban problems. One was smoke and smog, and this resulted in a long series of experiments and concern by the Institution into industrial effluents and industrial pollution, and the other was urban effects on people. In a famous speech of 1874, he declaimed on the difference that was observable in people when they had left the farm and the country and gone to live in the city. They became subject to vice, they became prey to all manner of evil, they lost their morality, they lost their sense of responsibility. They preyed on other people, just as animals did in the jungle, and he implored citizens, concerned citizens in this country, to erect museums and educational and cultural institutions in the cities to help overcome this urban cultural blight which he could see spreading.

Henry's successors have kept up this tradition of concern through the idea of museum exhibitions and museum educational programs. You yourselves, members of this committee, support our Anacostia Neighborhood Museum program which can be traced to being a direct outgrowth of our concern with the fact that something about the urban condition and the urban environment does destroy the morale of people who live there, and tend to erode the morale and the spirit of people who live there.

SMITHSONIAN SUPPORT FOR ASTROPHYSICS AND SPACE SCIENCE

The astrophysical work began in this Institution in 1874 with the interest of Samuel P. Langley, who eventually became Secretary of the Smithsonian. Langley was an astronomer who predicted many of the results that have emerged subsequent to his death. For example, in a paper in 1903, Langley predicted that rocket propulsion would be possible for a heavier-than-air craft. It was this statement in one of his papers which drew Dr. Robert H. Goddard to write to the Institution in 1916 to say that everybody else thought he was crazy, but

maybe the Smithsonian wouldn't because one of the Secretaries of the Smithsonian had been writing about rockets. As a result the Smithsonian provided the first grant that he received for rocket research.

Mrs. HANSEN. The committee will adjourn until 2 o'clock.

AFTERNOON SESSION

SMITHSONIAN ACTIVITIES DURING NEXT 5 YEARS

Mrs. HANSEN. The committee will come to order.

We would be interested in hearing your ideas on what the general scope of Smithsonian activities should be within the next 5 years.

BICENTENNIAL OF AMERICAN REVOLUTION

Dr. RIPLEY. Of course we have two big projects coming up which have been discussed over the years past with this committee. In the first place, we have this question of the extent to which the Congress would like us, as the Smithsonian, to prepare for the Bicentennial of the American Revolution, the extent to which Congress feels that it is appropriate that we should participate.

(Discussion off the record.)

Dr. RIPLEY. This certainly is a principal concern of the Institution. As you know, the proposal by the Commission itself, the American Revolutionary Bicentennial Commission, is that it will be a series of commemorative events stretching over to 1982, so that in effect we will be involved in a series of exhibits and commemorative programs.

Mrs. HANSEN. The Bicentennial celebration won't actually be completed until the 100th anniversary of the adoption of the Constitution.

Dr. RIPLEY. Yes. You mean 1984 really?

Mrs. HANSEN. Isn't it 1987 through 1989?

Dr. RIPLEY. My fault; yes. I hadn't really thought of it as being as long as that. I agree though.

Mrs. HANSEN. I think the history of the Republic, in that context, begins with the Declaration of Independence.

Dr. RIPLEY. Yes.

Mrs. HANSEN. Mr. Marsh, the Bicentennial Commission, and myself, felt that the activities of the Commission should extend through the 100th anniversary date of the adoption of the Constitution.

Dr. RIPLEY. Right. That, of course, is 1988. Well, that date certainly would wind up our participation in this. We have said all along that we feel that we must mount an appropriate presentation for the Bicentennial, but that we have committed ourselves, before this committee, that we will do this, and then diminish any personnel after that. The Bicentennial observance may have its own budget and its own program as part of our activities, but we will not featherbed and just add its personnel permanently to our staff. We will conclude the celebration with an appropriate diminution and winding down of the occasion. However, this will require, from our point of view, staging, phasing, budgeting, taking on of temporary personnel to accomplish these purposes.

AIR AND SPACE MUSEUM CONSTRUCTION

The second objective that I can see as one which is authorized is the eventual planning and construction of an air and space museum. I had hoped as you know, Madam Chairman, this year to obtain some planning funds, to try and save the Government a considerable amount of money by planning for a contemporary, much less expensive building. I felt that we were built into a situation where, if we built a building over the next 5, 6, or 10 years with yesterday's plans, we would be causing unnecessary inefficiencies, both in the plan and design of the building, and in the consequent expense of it. It would be far better to start prudently replanning and perhaps save a very considerable amount of money.

I mentioned this to the Administrator of GSA.

(Discussion off the record.)

Dr. RIPLEY. I had hoped that in perhaps another year we can plan for this, that we can ask for some appropriate planning money to try and scale down this museum, which I feel should be built. I realize that at the moment the idea of a large air and space museum seems relatively extraneous. It is true that in the legislative report on the authorization it says that construction will be delayed until such time as there has been a marked deescalation in the Vietnam conflict. I hope this delay doesn't end up costing us a lot more money. I hope we can phase into this project in the same way as the Bicentennial by trying to take it in steps and save money in the process.

ARMED FORCES HISTORICAL PARK

The general plan of the Institution is for programs that are subject to very little expansion at this time. One concern is how sensibly to handle the proposals which have been on the books and authorized by the Congress since the 1950's. One example is the Armed Forces Historical Park, or whatever appropriate title one wishes to give it. At the present moment we would like to call it Bicentennial Park. We are concerned about how we should approach planning for an authorized project of this sort.

NATIONAL MUSEUM OF MAN

We would like to continue a forum discussion with Members of the Congress and members of the public at large who are interested in the problem of ethnic subcultures and minorities, and see whether we should not continue to develop plans for this existing Center for the Study of Man and evolve a National Museum of Man. We presently, as you know, have a Museum of Man as a component of our Natural History building. I would like to dignify this after appropriate discussion and development of public awareness with the concept of perhaps an exhibit building celebrating the roots and the history of the ethnic subcultures of this country. I think this would have a very marked effect on the education of young people.

SEMINAR AND PUBLIC DISCUSSION SERIES

We plan to continue our seminar series and our public discussion series. For these we raise private funds. They have been very successful. Last year's was on the behavior of higher primates. We called it "Man and Beast", and it was a very interesting symposium, participated in to some extent by the Congress. We had an open session and seminar up here on the Hill, and a number of Members of the Congress came and were greatly interested in the discussion.

As you know, there has been much popular literature on the subject, recently the books of Konrad Lorenz, Robert Ardrey, and Desmond Morris and so on, on the curious phenomenon of the discoveries of behavior patterns of the higher primates, and at least a suggestive resemblance to some human behavior.

PLANNED SEMINAR ON CULTURAL STYLES AND SOCIAL IDENTITY

We plan this coming year to have a similar seminar on the subject of social identity and disorders and confusion at the present time. I anticipate by the spring we will have the funds and the exhibit plans in hand to put on a pioneering exhibition for youth on the historical roots and the rationale of hallucinogens and narcotics. We feel that this is such a pressing and urgent subject, which should be understood culturally and as a problem of social identity. We as the premier department of museum-related anthropology probably in the world are amply equipped to handle an exhibit of this kind. It could travel around the United States and could have what I would hope it would have, a sense of relating the whole history of the subject in such a way that people would lose the sort of fever of excitement and novelty. If the young could only understand that there is nothing new about mescaline, marijuana, heroin, hashish, opium, or whatever, and that these are parts of the cultural roots of all peoples, then much of the novelty, like the theories of prohibition, much of the novelty would instantly vanish, and they would realize that they are not participating in an exciting underground phenomenon, but that they are merely part of a temporary and ephemeral vogue.

(Discussion off the record.)

Dr. RIPLEY. We think that this is the kind of service that the Institution can do effectively, where we have our own resources in terms of anthropology, where we have publications on peyote. We have information on the use of peyote and mescaline, going back to the 1890's in the Smithsonian anthropology publication series. I think it is high time that the Institution got involved with this kind of relevant exhibition as part of our seminar series.

SMITHSONIAN ASSISTANCE TO MUSEUMS

I think the next 10 years, Madam Chairman, are going to provide a great threat to the survival of museums, because the demands for the kinds of educational exhibits that we can provide are going to become so extreme that our own budgets may fail to support these demands, and we may not—

Mrs. HANSEN. This is why this committee hoped that the States could participate in the this type of program. I might make a suggestion that you contact the Governor's group.

Dr. RIPLEY. The Governor's Conference?

Mrs. HANSEN. You might contact the Governor's conference, the Legislative Branch conference, and the Council of State Governments.

Dr. RIPLEY. I am delighted to have you mention that, because I hadn't been able to think of a ready access to them, except through the Federal Council on the Arts and the Humanities.

Mrs. HANSEN. If the Council of State Governments could begin discussions and indicate their willingness to participate, I am sure Federal matching funds would be appropriated. There is going to be, as you mentioned, a continuing need, and I think discussions must start to evaluate the needs and to develop a plan of State participation.

Dr. RIPLEY. I think it is vitally important for the museum field, because the methodology of teaching is going to change radically I am sure within the next 10 years. One of the fingers is going to come and point squarely at the museums to provide the answers for some of the new concepts. These concepts are already being discussed by sociologists. They are already being planned and programed by planners. We have no funds necessarily to meet this challenge.

YOUTH IN MUSEUM EDUCATION

Mrs. HANSEN. There is a great number of young people trained in the humanities who are interested in museum technology. Yet because of the lack of planning and lack of funding nothing is being done to capture this group who are oriented, probably as no other group has been, to the significant challenges of today. In 10 years you might not have a group of young people who are as interested in the arts as they are today.

Dr. RIPLEY. We have had individual approaches. A particular State, for example, has asked us to install a museum for them in their State, and offered to pay all the expense. We have had to turn this down because we felt that if we started doing this for one State, we might end up actually working our entire time outside of Washington.

Mrs. HANSEN. But if you had the States participating financially in this type of program more could be accomplished.

Dr. RIPLEY. I am going to see this particular Governor at the end of next week, and I will propose to him that perhaps he can help me bring this up at the Governors' Conference, too.

COUNCIL OF STATE GOVERNMENTS

Mrs. HANSEN. You must sit down and discuss these problems with the Council of State Governments. They are a very forward looking group and a very progressive and thoughtful group, especially in the 13 Western States.

Dr. RIPLEY. I am very grateful for that suggestion, because we do feel this is one of our highest priorities. I think that concludes my statement.

BASIC ACTIVITIES

Mrs. HANSEN. Is it your feeling that your more extensive activities during the past 10 years have in any way resulted in what is popularly thought of as your "basic fundamental activities" being neglected?

Dr. RIPLEY. No, Madam Chairman. I do not think so. I think it is true that the opening of the new National Museum of History and Technology has brought a fresh approach to the world at large of the Smithsonian's image and picture. The opening of these two art galleries, the National Collection of Fine Arts and the National Portrait Gallery, has in effect brought a fresh image of the Smithsonian to the world at large, but I don't think basically that we are departing from any more of our mandate, as it were because the very presence of these physical entities has allowed us to utilize the objects in the collections so much more effectively that I am constantly being challenged at somehow having brought a new broom to the Smithsonian and so on. All we have been doing is taking advantage of these wonderful buildings, and exposing our wares to the public and creating, of course, more understanding.

Mrs. HANSEN. Aren't the museums of today not just a walk-through experience but a part of explaining a way of life?

Dr. RIPLEY. Yes, I think that is absolutely right.

EFFECT OF NEW TAX LAWS ON PRIVATE CONTRIBUTIONS TO MUSEUMS

Mrs. HANSEN. To what extent have private contributions to museums been affected by recent changes in the tax laws and the spiral of inflation we have been experiencing?

Dr. RIPLEY. It is too early, I think, to hazard a guess, but we have noticed a general diminution or pause, I think, is a good word, in private contributions. Since the enactment of the tax laws, the tax bill of last year, the foundations, for example, have been continually reexamining their programs and their fiscal situation, in anticipation of having to pay various sorts of taxes, and in the process have just held off giving funds in general. This has been a very noticeable effect. In the same way private donors are now concerned about whether they should set up foundations, or whether they should give the money outright to some charitable institution, and they as a result are in a pause situation, and are not doing anything.

VISITORS TO THE SMITHSONIAN

Mrs. HANSEN. Please insert in the record a tabulation of Smithsonian Institution visitation for the last 10 years.

Dr. RIPLEY. We will do so.

(The information follows:)

Smithsonian visitor attendance, fiscal years 1960-70

1960.....	6, 494, 630	1966.....	12, 150, 854
1961.....	7, 103, 474	1967.....	13, 312, 586
1962.....	8, 923, 131	1968.....	11, 523, 897
1963.....	10, 309, 836	1969.....	10, 430, 730
1964.....	10, 813, 195	1970 (estimated).....	13, 665, 000
1965.....	13, 153, 713		

An additional approximate 3 million visitors come to the National Zoological Park and 40,000 to the Anacostia Neighborhood Museum.

GIFTS DURING PAST YEAR

Dr. RIPLEY. Would you be interested, in connection with your previous question, Madam Chairman, for us to detail any of the private gifts that we have received during the past year?

Mrs. HANSEN. Please do. Many people are unaware of the extent of private contributions to the National Gallery of Art and to the Smithsonian Institution.

(The information follows:)

SIGNIFICANT CONTRIBUTIONS DURING PAST YEAR

OUTSTANDING ACQUISITIONS

National Museum of Natural History and Technology

Sword of Col. Benjamin Talmidge of the Continental Army (gift valued at \$10,000).

Specialized collection of American Colonial and Continental currency notes as well as original 18th century packages of Rhode Island notes banded by the State Treasurer's Office (gift valued at \$10,000).

Specialized collection of Russian gold and platinum coins and medals donated by Mr. Willis H. DuPont (valued at about \$1.5 million).

One Boyd City Express Post mail box of about 1844 representing one of the earliest objects extant relating to the collection of U.S. mail; predating European letter boxes by about 10 years (gift).

Pullman negatives, a collection of 13,000 glass and film negatives which records in exceptional detail the products (1885c-1930c) of America's largest railroad car builder (gift valued at \$20,000).

National Portrait Gallery

Portrait of Gen. Horatio Gates—oil on canvas by James Peale after Charles Willson Peale (gift of \$12,000).

Portrait of Andrew Jackson—water color by James Barton Longacre (gift valued at \$3,500).

National Air and Space Museum

X-15 rocket powered aircraft (on indefinite loan from the Air Force).

Archival collection of 180,000 negatives (gift of the Curtiss-Wright Corp.).

Apollo 8 space craft (Borman flight) (transfer from NASA).

Apollo 11 material.

National Museum of Natural History

Archeological material from South Dakota—this is a collection of 12,000-13,000 objects dating back to 1200-1400 A.D., before the advent of the white man in North America. Collected by the River Basin Surveys.

Coelacanth specimen (a living fossil)—gift of Dr. H. N. Schnitzlein, University of Alabama Medical Center.

Mammal specimens from Venezuela and Africa—these 26,000 specimens were acquired through field research of the Smithsonian Venezuelan project and the African Mammal project. They represent an approximate 5 percent addition to the Museum's mammal holdings and include new species.

National collection of fine arts

"Grey Sun"—Arni marble sculpture by Isami Noguchi (gift of the artist, valued at \$40,000).

"24 Lines"—Stainless steel sculpture by George Rickey (gift valued at \$30,000).

FINANCIAL GIFTS AND BEQUESTS

Major contributions included the \$685,000 of funds received from Cooper Union and the Committee to Save Cooper Union Museum in connection with the Smithsonian assumption of responsibility for that museum; \$150,000 from the

Scaife Family of Pittsburgh and \$75,000 from the Old Dominion Foundation for the Chesapeake Bay Center land acquisition project; Ford Foundation grants of \$208,500 and \$45,000, respectively, for "Reading is Fundamental" and the new Woodrow Wilson International Center for Scholars; \$230,000 from the Morris and Gwendolyn Cafritz Foundation for the new Calder setting on the Mall; and a bequest of \$235,000 and a valuable collection of hemiptera-heteroptera from the Carl Drake estate.

Mrs. HANSEN. People are prone to forget the investments made in the form of gifts that are part of our Nation's legacy. Isn't this correct?

Dr. RIPLEY. This is absolutely correct.

NECESSARY CHANGES TO MAKE THE SMITHSONIAN MORE RESPONSIVE TO PUBLIC NEEDS

Mrs. HANSEN. If it were not for various restrictions which exist, including the availability of funds, what major changes would you make in the operation of the Smithsonian Institution to make it more responsive to the intellectual needs of our people?

Mr. REIFEL. Madam Chairman, before he responds to that question, did I understand that you are going to insert those contributions in the record?

Dr. RIPLEY. And the visitation.

Mr. REIFEL. Are you going to have those inserted in the record?

Dr. RIPLEY. We will insert these in the record and the visitation will be in the record. We have these figures.

(Discussion off the record.)

IMPROVEMENT OF EXHIBITS AS EDUCATIONAL TOOLS

Dr. RIPLEY. The essential problem of administering an institution which has museums as its most visible component revolves around the difficulty of bringing into play the research done by the staffs and the exhibits which are to a large extent an outgrowth of that research. We feel that as far as the public image is concerned of the Institution, our principal marketable product is our exhibits. These are extremely difficult to keep up to date and to change without ample funding. We are continually plagued by lack of sufficient funds to change the exhibits to incorporate new research and new educational techniques. We would like to make our exhibits twice as exciting as they are at the present, and therefore twice as effective as educational tools, and fiscal restraint is really the principal difficulty here, but another difficulty is the hiatus between public understanding of what museums do and the ability of educators to realize the importance of what they can do, and to participate.

We are also having to act as missionaries with the educational establishment, to persuade them to give us the tools effectively to improve and up-date our exhibits at all times.

RESEARCH AND COLLECTION OF INFORMATION

In terms of the scholarly world, one of our greatest needs at the present is the automatic data processing of information. We know from our connections with the people who are working on the environ-

ment and ecology that if we have sufficient resources in funds to really make our program in automatic data processing go ahead fast, we would be able to answer a good number of the questions which people concerned with environmental problems are floundering about trying to ask. It is merely a question of mobilizing the information in correct procedures and programs, and then asking the question of the machines and getting it out.

I have cited before to this committee the contrast between World War II days and the difficulty of finding out where certain marine organisms are concerned, and today when it is possible, with automatic data processing, to produce answers in minutes instead of months.

SCIENCE INFORMATION EXCHANGE

We have a part of the Smithsonian known as the Science Information Exchange, which specializes in biology, medicine and agriculture. This has been an attempt by us, over the past 20 years, to get data reports, reports of on-going research in these particularly vital fields today, and keep them in a data bank, and then make available at any moment to Government agencies, the Executive, or the Congress, whenever they want them, summaries of these reports of on-going research.

We are terribly badly underfunded. Originally the agencies agreed to pay for all expenses of running this service. Then they handed the service to the National Science Foundation and said, "You fund it," and the National Science Foundation, with budget cuts, began, of course, cutting off peripheral activities which were not administered by it. Naturally we are severely understaffed and funded today. We have lost over 40 people, and it is a serious problem, because once you have a data bank, and once you have had it for 20 years, the main thing is that that exists, and you have it, and if you want to throw it away, it is just like taking a match to the Library of Congress and burning it up.

It seems to me a tragic loss to the future of environmental studies and those who are working on it, if this service is to be dropped. I am deeply concerned about this as a priority item for the kind of things which the Smithsonian administers.

FORMULATION OF SMITHSONIAN POLICIES

Mrs. HANSEN. To what extent do the various museum directors and bureau heads in your organization have a positive voice in formulating the general policies of the Smithsonian Institution.

Dr. RIPLEY. To a very major extent. We have weekly or monthly meetings with the bureau heads. They have complete responsibility for their own administrative policies in their museums. They, of course, participate at all levels in the budgeting. Our purpose is to give them as much administrative flexibility as we can, trying to centralize some services to make them more flexible fiscally.

GOVERNING OF SMITHSONIAN PROGRAMS

Mrs. HANSEN. Please describe for the committee the extent to which administration of Smithsonian programs are governed by the Board of Regents.

Mr. BRADLEY. Madam Chairman, I should say that the Board of Regents is a very effective control and policy board that does review all principal actions. On two occasions and sometimes on three occasions each year there are meetings of the Board of Regents, each preceded by a week or two by the Executive Committee, when that committee goes into matters somewhat more deeply.

Mrs. HANSEN. Insert in the record the members of the executive committee and the Board of Regents.

(The information follows:)

BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION

Hon. Warren E. Burger, Chief Justice of the United States, Chancellor of the Smithsonian Institution.

Vice President Spiro T. Agnew, Regent of the Smithsonian Institution.

Hon. Clinton P. Anderson, U.S. Senate, Congressional Regent.

Hon. J. W. Fulbright, U.S. Senate, Congressional Regent.

Hon. Hugh Scott, U.S. Senate, Congressional Regent.

Hon. Frank T. Bow, U.S. House of Representatives, Congressional Regent.

Hon. Michael J. Kirwan, U.S. House of Representatives, Congressional Regent.

Hon. George H. Mahon, U.S. House of Representatives, Congressional Regent.

Mr. John Nicholas Brown, Citizen Regent from Rhode Island.

Mr. William A. M. Burden, Citizen Regent from New York.

Mr. Crawford H. Greenewalt, Citizen Regent from Delaware.

Mr. Caryl P. Haskins, Citizen Regent from the District of Columbia.

Vacancy, Citizen Regent from the District of Columbia.

Mr. Thomas J. Watson, Jr., Citizen Regent from Connecticut.

EXECUTIVE COMMITTEE (PERMANENT COMMITTEE) OF THE BOARD OF REGENTS

Hon. Warren E. Burger, Chancellor.

Mr. Caryl P. Haskins, Chairman (ad interim).

Hon. Clinton P. Anderson.

S. Dillon Ripley, Secretary.

Mr. BRADLEY. I should say that a quick answer, and I am sure you need a quick answer, is that they are very effective, since we put before the Board of Regents all principal actions, policy actions, appointments, finances, position on legislation, policy changes and so forth, new programs, everything is laid before the Board.

OFFICIAL REVIEWS

Mrs. HANSEN. How often are your activities reviewed by the General Accounting Office or other official investigative staffs?

Mr. BRADLEY. We have most recently, Madam Chairman, had a general review of financial practices during this very past year, and we are in the process now of reviewing and commenting on their draft report, which has not yet been accepted by the Comptroller General. It is in the process of being discussed between the staff there and the staff here. Before that there was only a payroll check about 6 years earlier.

Dr. RIPLEY. Our private funds, of course, are completely audited every year by outside auditors.

Mrs. HANSEN. Is the outside auditors' report on file with your Board of Regents?

Dr. RIPLEY. Yes, and appears in our annual report and the reports are on file.

Mrs. HANSEN. What firm audits your private funds?

Mr. BRADLEY. Peat, Marwick & Mitchell, and Co.

GENERAL COUNSEL'S OFFICE

Mrs. HANSEN. How many lawyers on the General Counsel's staff?

Mr. BRADLEY. Madam Chairman, including himself, five.

Mrs. HANSEN. I would like to pay tribute to one of your staff who assisted the Committee last year in a rather intricate discussion. I have never had an attorney, who understood the time in which we are living more than that gentleman. I thought it was an extremely beneficial afternoon. He participated with the counsel from Interior and the solicitor from Agriculture. It was a very interesting discussion, because the three counsels represented three different types of program administration, and the breadth of knowledge of your attorney was exceptionally good.

Mr. BRADLEY. Madam Chairman, that was Peter Powers.

Mrs. HANSEN. He was excellent. I wish you would tell him that we deeply appreciated his experience, expertise, and understanding.

Dr. RIPLEY. We certainly will.

Mrs. HANSEN. What would be your evaluation of their competence to interpret existing laws and Federal regulations?

Mr. BRADLEY. I think that the staff that we now have is quite competent. I think that they come to us because here they find variety. Here they find, to use the famous word today "challenge", but here they find in a small agency that they can't become a specialist on a particular facet of the law, and so they get this diversification which demands versatility on their part, and this in turn provides interest, and so we are an attractive target for bright young attorneys.

Mrs. HANSEN. This is what we found from our experience last year.

Dr. RIPLEY. We are unhappy to report we lost two of our staff to Congressional committees in the past year. And both of them are in the environmental field, which is very interesting.

Mrs. HANSEN. Would you say they are given an active role in making certain that all activities of the Smithsonian Institution are administered within the limitations of existing law and Federal regulations?

Dr. RIPLEY. Complete. I think there is no question.

Mr. BRADLEY. Increasingly so, Madam Chairman.

ASSOCIATION WITH OTHER MUSEUMS

Mrs. HANSEN. Please relate for the committee your association with other museums of the country with regard to existing arrangements for exchange of knowledge and your cooperative work in solving present day problems of museum administration.

Dr. RIPLEY. This consists essentially, Madam Chairman, of two functions. One is the representative activities that we take part in with two museum associations. One is the American Association of Museums, and the other is the International Council of Museums, on which I sit at present, and I have formerly sat on the other board. Our general counsel, Mr. Peter Powers, and our director of museums, Mr. Frank Taylor, participate in all conferences and meetings of these groups that they can possibly attend, which is virtually all.

We take a position of offering services and facilities to the museum field in general, which includes, of course, these hundreds of applications for service advice a year. In addition, we have from time to time collaborated with groups, such as the American Association of Museums, in official museum representation with the Government. For example, discussions leading to the Belmont Report that I mentioned this morning. In my capacity, sitting on the Federal Council on the Arts and the Humanities, I then am able to help represent museum interests on that Council, and to plead for special recognition, as I can, along with, I may say, Carter Brown, who has now replaced John Walker and is also on the Federal Council.

In the foreign field, in the international field, we have a major role to play through the use of excess foreign currencies. In our special foreign currency program we have developed several hundred projects in the last 4 years using this opportunity to bring American museums and museum institutions, museum-like institutions into touch with foreign counterparts, in common efforts in archeology, museum practices, biology, and the like. This has been, of course, one of the most fruitful things that we could have done for the museum field in this country, giving them an option, an opening to foreign countries and foreign activities.

(Discussion off the record.)

SALARIES AND EXPENSES

Mrs. HANSEN. Please insert pages 1 through 63 of the justifications in the record.

(The pages follow :)

SMITHSONIAN INSTITUTION

"Salaries and Expenses"Summary Statement

Appropriation Act, Fiscal Year 1970.....	\$28,134,000
Anticipated Supplemental	+1,431,000
Total Available, Fiscal Year 1970.....	29,565,000
Non-recurring.....	<u>-100,000</u>
Fiscal Year 1971 Base.....	29,465,000
Budget Estimate, Fiscal Year 1971	<u>36,367,000</u>
Increase, Fiscal Year 1971.....	<u>\$6,902,000</u>

Summary of Increases Fiscal Year 1971

<u>Page</u>		<u>Amount</u>
B-7	Necessary Pay-- for annualization of General Schedule and Wage pay raises and periodic step increases.....	\$531,000
B-9	Office of the Director General of Museums-- to design and develop new educational exhibits and to provide training under the National Museum Act.....	75,000
B-11	National Museum of Natural History-- to apply computer systems to important botanical, vertebrate, invertebrate, and fossil collections, and to undertake special anthropological, geological, and marine invertebrate research projects.....	200,000
B-15	National Air and Space Museum-- for preservation and display of historic space objects in keeping with strong public interest sparked by the moon flights.....	50,000
B-17	National Zoological Park-- for the operation of the new Hospital-Research Building and other spaces, grounds care, animal purchases and food, and animal health programs.....	2,994,000
B-24	Anacostia Neighborhood Museum-- for continued successful operations of a community museum with special emphasis on workshop, craft, and instructional activities for children.....	75,000
B-25	Renwick Gallery of Art-- to prepare this restored and renovated museum of arts, crafts, and design for a planned public opening in fiscal year 1971	100,000

B-26	Joseph H. Hirshhorn Museum and Sculpture Garden-- to prepare the gift collections of art and sculpture for the opening of a major art gallery under construction on the Mall	375,000
B-28	Smithsonian Tropical Research Institute-- for an environmental monitoring program on Barro Colorado Island, building on 40-years of project research, and for comparative marine ecological studies	100,000
B-30	Radiation Biology Laboratory-- to operate, staff, and equip the new laboratory building in order to realize the research potential permitted by the authorized new space	200,000
B-32	Smithsonian Office of Ecology-- for baseline biological studies and property protection at the Chesapeake Bay Center for Environmental Studies--a geographic area of unusual economic importance	\$55,000
B-34	Office of Oceanography and Limnology-- to sort, identify, and distribute backlogged marine biological and geological collections being requested by researchers for the study of marine resources	150,000
B-36	Center for the Study of Man-- to begin actual work on the revision of the Handbook of North American Indians (the standard reference in this field) and to fund grants for urgent anthropology studies	50,000
B-37	Center for Short-Lived Phenomena-- for the maintenance of a rapidly developing and responsive worldwide reporting system on biological, geophysical, and astrophysical events as they are occurring	25,000
B-39	American Revolution Bicentennial Program-- for scholarship, exhibitions and other presentations, and national cooperative assistance to other museums	400,000
B-44	Environmental Sciences Program-- to build on traditional Smithsonian competence in the sciences and the humanities for environmental assessment, prediction, and education	600,000
B-49	Academic Programs-- to serve college, university, and Smithsonian needs by providing additional opportunities for research and advanced study and to improve the elementary and secondary school tour program	75,000
B-51	Office of the Treasurer-- for strengthened financial management and postage and Workmen's Compensation requirements	60,000

B-52	Division of Performing Arts-- for production requirements of the American Folklife and College Theatre Festivals and assistance to state and local cultural groups	50,000
B-53	Office of Personnel and Management Resources-- to meet an increased personnel assistance workload created by new Smithsonian programs and additional Civil Service Commission requirements.....	50,000
B-54	Health Units-- to establish a health unit in the Arts and Industries Building to serve emergency needs of visitors and staff	10,000
B-55	Information Systems Division-- to improve the reference and research value of Smithsonian collections in art, history, and science by applying modern information storage and retrieval techniques.....	\$100,000
B-56	Smithsonian Institution Libraries-- to correct serious deficiencies in its ability to serve the Institution and outside users by increasing book and journal purchases, binding and preservation, reference services, and the protection of gift and rare books.....	150,000
B-58	Photographic Services Division-- for exhibit and publication photographic services	25,000
B-59	Smithsonian Institution Press-- for the preparation of exhibition and collection catalogs and research reports.....	75,000
B-60	Buildings Management Department-- to meet the costs of operating, maintaining, and protecting the Renwick Gallery scheduled to open and to fund the higher costs of utilities, communications, and the repair and preventative maintenance of security and fire detection systems and elevators and escalators	<u>327,000</u>
	Total Increase.....	\$6,902,000
	Nonrecurring	<u>-100,000</u>
	Net Increase, Fiscal Year 1971	\$6,802,000

SMITHSONIAN INSTITUTION
"Salaries and Expenses"

Summary of the 1969 Appropriation and 1970 and 1971 Estimates

Page No.	Unit	1969 Actual		1970 Estimate		1971 Estimate		Analysis of Increases		
		Pos.	Amount	Pos.	Amount	Pos.	Amount	Pay Increase ^{1/}	Program Amount	
1. Museums of Science and History (including research)										
B-9	Office of Director General of Museums...	5	\$208,000	7	\$240,000	10	\$317,000	\$2,000	3	\$75,000
	Office of Exhibits	167	2,173,000	167	2,337,000	167	2,362,000	25,000	0	0
	Conservation Analytical Laboratory	10	116,000	11	151,000	11	154,000	3,000	0	0
	Office of the Registrar	28	271,000	29	302,000	29	305,000	3,000	0	0
B-11	National Museum of History and Technology	154	1,869,000	155	2,056,000	155	2,085,000	29,000	0	0
B-15	National Museum of Natural History	258	3,456,000	258	3,674,000	268	3,930,000	56,000	10	200,000
B-17	National Air and Space Museum	41	505,000	41	570,000	45	625,000	5,000	4	50,000
	National Zoological Park	0	0	0	0	252	3,125,000	131,000	252	2,994,000
	National Armed Forces Museum Adv. Bd.	7	129,000	7	148,000	7	151,000	3,000	0	0
B-24	Anacostia Neighborhood Museum	4	42,000	8	82,000	12	159,000	2,000	4	75,000
	Total, Museums of Science & History	674	8,769,000	683	9,560,000	956	13,213,000	259,000	273	3,394,000
2. Art Galleries										
B-18	Freer Gallery of Art	7	37,000	7	54,000	7	56,000	2,000	0	0
B-25	National Collection of Fine Arts	56	951,000	56	1,043,000	60	1,155,000	12,000	4	100,000
B-26	National Portrait Gallery	27	568,000	27	818,000	27	824,000	6,000	0	0
	Joseph H. Hirshhorn Museum and Sculpture Garden	7	149,000	13	347,000	20	726,000	4,000	7	375,000
	Total, Art Galleries	97	1,705,000	103	2,262,000	114	2,761,000	24,000	11	475,000
3. Research Activities (other than museums)										
B-28	Smithsonian Astrophysical Observatory...	54	1,898,000	57	2,060,000	57	2,074,000	14,000	0	0
B-30	Smithsonian Tropical Research Institute...	23	409,000	38	460,000	43	571,000	11,000	5	100,000
B-32	Radiation Biology Laboratory	32	399,000	36	789,000	40	998,000	9,000	4	200,000
B-34	Office of Ecology	5	110,000	5	133,000	8	190,000	2,000	3	55,000
B-36	Office of Oceanography and Limnology ...	18	310,000	18	336,000	26	496,000	10,000	8	150,000
B-37	Center for the Study of Man	1	82,000	2	113,000	5	164,000	1,000	3	50,000
	Center for Short-Lived Phenomena	0	0	0	10,000	1	35,000	0	1	25,000
	Smithsonian Research Awards	0	400,000	0	400,000	0	400,000	0	0	0
	Total, Research Activities	133	3,608,000	156	4,301,000	180	4,928,000	47,000	24	580,000
4. Special Programs										
B-39	American Revolution Bicentennial	0	0	0	0	5	400,000	0	5	400,000
B-44	Environmental Sciences Program	0	0	0	0	14	600,000	0	14	600,000
	Total, Special Programs	0	0	0	0	19	1,000,000	0	19	1,000,000

SMITHSONIAN INSTITUTION
SALARIES AND EXPENSES, FISCAL YEAR 1971

JUSTIFICATIONS

1/ Pay Increases

Need for Increase--An increase of \$531,000 is required to finance existing positions. This total is made up of funds for personnel compensation (\$494,000) and personnel benefits (\$37,000). An amount of \$400,000 of this request is for the existing staff of the Smithsonian Institution currently being financed from the appropriation "Salaries and Expenses." The other \$131,000 is for similar types of pay requirements for the employees of the National Zoological Park. The National Zoological Park employees have been financed from funds advanced from the District of Columbia, but in fiscal year 1971 it is proposed to transfer the financing directly to the Smithsonian.

The requested increase is made up of the following components:

- | | |
|---|-----------|
| (1) Annualization of the pay raise granted to current General Schedule employees on July 13, 1969..... | \$53,000 |
| (2) Annualization of the Wage Grade increases granted in October 1969 and to local rate employees in the Canal Zone | \$172,000 |
| (3) Periodic step-increases in accordance with the Government Employees Salary Reform Act of 1964 and step-increases granted to Wage Grade employees in accord with prevailing Government-wide practices will cost an additional \$255,000. This includes the portion of the fiscal year 1971 step-increases to be paid in that year and the carryover cost from fiscal year 1970. The apparent cost was determined through a position-by-position study and has been reduced to real cost by projected offsets resulting from employees being separated or promoted before receiving step-inc increases and from filling some positions at a lower grade step than the former incumbents held..... | \$255,000 |
| (4) To finance the pay raise granted to the police force at the National Zoological Park by Public Law 91-34, approved June 30, 1969..... | \$40,000 |
| (5) To finance positions at the National Zoological Park that were funded for only part of the year during fiscal year 1970..... | \$11,000 |

A thorough examination of Smithsonian operations has been made to determine and apply the maximum possible degree of absorption in all areas of increased pay. Absorption of an additional amount in fiscal year 1971 is impossible in the face of present workloads and nondeferrable expenses. Over three years, the Smithsonian has absorbed approximately \$400,000 of the several General Schedule and Wage pay increases. In fiscal year 1970, 78 percent of the total operating appropriations are devoted to the largely nondiscretionary costs of payroll, benefits, rent, communications, and utilities. Additional funds for pay purposes in fiscal year 1971 could be found only by forced cuts in employment or by diverting a large portion of the remaining operating funds appropriated to the Smithsonian to rectify material and equipment shortages in its museums, galleries, and laboratories.

SMITHSONIAN INSTITUTION

"Salaries and Expenses"Necessary Pay Increases Fiscal Year 1971

<u>Organizational</u>	<u>Unit</u>	<u>Annualization</u>		<u>Within-</u>		<u>Total</u>
		<u>GS Pay</u>	<u>Wage</u>	<u>Grade</u>	<u>Other</u>	
		<u>Raise</u>	<u>Raise</u>			
United States National Museum:						
	Office of the Director General of					
	Museums	0	0	\$2,000		\$2,000
	Office of Exhibits	\$3,000	\$2,000	20,000		25,000
	Conservation Analytical Laboratory	0	0	3,000		3,000
	Office of the Registrar.....	0	0	3,000		3,000
National Museum of History and						
	Technology.....	3,000	0	26,000		29,000
	National Museum of Natural History...	8,000	0	48,000		56,000
	National Air and Space Museum.....	1,000	1,000	3,000		5,000
National Armed Forces Museum						
	Advisory Board.....	0	0	3,000		3,000
	Anacostia Neighborhood Museum	0	0	2,000		2,000
Freer Gallery of Art.....						
	National Collection of Fine Arts.....	1,000	0	11,000		12,000
	National Portrait Gallery.....	1,000	0	5,000		6,000
Joseph H. Hirshhorn Museum and						
	Sculpture Garden.....	1,000	0	3,000		4,000
Smithsonian Astrophysical Observatory						
	Smithsonian Tropical Research	3,000	0	11,000		14,000
	Institute.....	2,000	6,000	3,000		11,000
	Radiation Biology Laboratory.....	1,000	0	8,000		9,000
	Office of Ecology	0	0	2,000		2,000
	Office of Oceanography and Limnology.	1,000	0	9,000		10,000
	Center for the Study of Man.....	0	0	1,000		1,000
Academic Programs						
	Office of International Activities.....	0	0	5,000		5,000
	Office of International Activities.....	0	0	2,000		2,000
	International Exchange Service	0	2,000	2,000		4,000
Office of the Secretary						
	Office of the Secretary	1,000	0	7,000		8,000
	Management Support	1,000	0	8,000		9,000
	Office of the Treasurer.....	1,000	0	4,000		5,000
	Division of Performing Arts.....	0	0	3,000		3,000
	Supply Division	1,000	0	3,000		4,000
Office of Personnel						
	Office of Personnel	1,000	0	3,000		4,000
	Health Units	0	0	1,000		1,000
	Office of Public Affairs.....	0	0	2,000		2,000
	Information Systems Division.....	1,000	0	3,000		4,000
	Smithsonian Institution Libraries	1,000	0	13,000		14,000
	Photographic Services Division.....	0	0	3,000		3,000
	Smithsonian Institution Press.....	0	0	7,000		7,000
Buildings Management Department....						
	Buildings Management Department....	6,000	120,000	0		126,000
National Zoological Park						
	National Zoological Park	15,000	41,000	24,000	51,000	131,000
Total		\$53,000	\$172,000	\$255,000	\$51,000	\$531,000

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

OFFICE OF DIRECTOR GENERAL OF MUSEUMS

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>7</u>	<u>3</u>	<u>10</u>
11 Personnel Compensation.....	\$ 134,000	\$ 31,000	\$ 165,000
12 Personnel Benefits.....	9,000	2,000	11,000
21 Travel & Transp. of Persons ..	12,000	2,000	14,000
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	0	0	0
24 Printing and Reproduction	1,000	0	1,000
25 Other Services	73,000	27,000	100,000
26 Supplies and Materials	1,000	1,000	2,000
31 Equipment	<u>10,000</u>	<u>14,000</u>	<u>24,000</u>
TOTAL.....	<u>\$ 240,000</u>	<u>\$ 77,000</u>	<u>\$ 317,000</u>
<u>Analysis of Total</u>			
Pay Increases	\$5,000	\$2,000	\$7,000
Program.....	\$235,000	\$75,000	\$310,000

Specification of Increase (Program):Experimental Exhibits and Museum Education (2 positions, \$43,000)

Museums teach people about real things and arrange objects and happenings in perspective. By this relevance, museums can and do stimulate the viewer's interest and his desire to learn more about a specific subject. The Smithsonian believes that it and other museums can do a better job of supplementing and reinforcing formal education at all academic levels, especially at the elementary and secondary levels, by developing, testing, and getting visitor reactions to new exhibit techniques. This request is for an experimental psychologist and an experimental exhibits specialist (\$25,000) to plan and evaluate exhibition techniques. This staff will require funds for travel (\$2,000), other services (\$1,000), supplies (\$1,000), and equipment (\$14,000) to install test devices.

Museum Training Under the National Museum Act (1 position, \$32,000)

The Smithsonian receives about 1,000 requests a year from other museums and national and international associations of museums to provide training for museum personnel in conservation, exhibition, and other museum practices. Although the Institution can provide advice and informal on-the-job training (500 persons visited the Smithsonian for these purposes over the last year or so), it cannot meet these growing requirements in an adequate way. A program assistant (\$6,000) and \$26,000 for cooperative training grants and museum surveys and studies are requested.

OFFICE OF DIRECTOR GENERAL OF MUSEUMS

1969 Actual	\$208,000
1970 Estimate.....	\$240,000
1971 Estimate.....	\$317,000

The Office of the Director General of Museums provides program planning and review of the Smithsonian Institution's museum and exhibition activities with special emphasis on developing educational exhibits, surveying the impact of the Smithsonian on the visiting public, and providing assistance to other museums. It works cooperatively with museum professionals in the United States and abroad to increase the effectiveness of museums in the performance of their scholarly and public functions.

An increase of \$75,000 is requested to improve the educational effectiveness of exhibits and to increase museum training opportunities under the National Museum Act. An amount of \$2,000 is sought for necessary pay purposes.

Need for Increase1. Experimental exhibits and museum education (2 positions, \$43,000)

Museums teach people about real things and arrange objects and happenings in perspective. This is why they attract the public, particularly young people. This relevance is frequently lacking in other ways our young people are taught. As an example, dates are being eliminated from the study of social science because it is assumed they have no contextual value. Eliminating perspective is also a failure of informal learning media. The scale of time is lost on television where everything is instant, and nations of men can be born, live, and die, all within an hour's time.

The use of museums to stimulate interest, to create the desire to learn, and to encourage learning by the students' own efforts outside the classroom is increasingly required to strengthen faltering education at all levels. The Smithsonian's broad sweep of museums, large attendance, and comprehensive collections provide unequalled opportunities to experiment and develop new concepts of communication and museum education. The Smithsonian hopes to produce educational exhibits which will complement current elementary and secondary instructional practices. An important aspect of this effort will be to analyze the reaction and responses of the public, particularly children, to the Institution's exhibits in a constant effort to produce more effective displays.

Actions to date have included a seminar on museum communication and techniques to involve viewers with exhibits and collect information about their reactions. The visitors' survey is continuing. A summer institute on exhibit objectives and methods has been held. The Institution has explored ways of producing exhibitions on issues and concerns of the times that will permit the viewer to make choices of priorities and solutions, to see the consequences of his decisions, and to register his likes and dislikes. Several recent temporary exhibits have tried simple experimentation techniques.

Continued efforts to implement new techniques will be of great value to the Smithsonian's museums and other museums concerned with continually improving their public education efforts. Funding is requested for an experimental psychologist and an experimental exhibit specialist to plan and develop exhibition tests and to evaluate results (\$25,000). Services, supplies, and equipment, including the development and installation of test devices and the construction of exhibits, will add \$18,000.

2. Museum training under the National Museum Act (1 position, \$32,000)

Increased museum training opportunities under the National Museum Act for personnel from other museums and related organizations also will help to strengthen the public service capabilities of museums. About 1,000 requests a year are received from all parts of the United States and the world to provide training for museum personnel in the conservation of museum objects, in exhibition, in techniques of museum education, in administration and in the management of collections. National and international associations of museums urge surveys and studies of broad museum problems. They seek advice and require support for the purpose of setting standards of museum performance and professionalism in order to improve museum practices and to accredit museums. Training, standards, and accreditation are three of the principal needs of American museums described in the Belmont Report prepared by the American Association of Museums in response to former President Johnson's request. The Report recognizes the special capabilities of the Smithsonian Institution to aid these studies and provide training.

Within existing resources, the laboratories and offices of the Smithsonian have responded. More than 500 museum personnel have come from other institutions to spend from a day to a year seeking specialized advice and learning techniques. These visitors came from 35 states and 25 foreign countries. Smithsonian resources are not adequate, however, to meet the growing requirements for museum assistance and development. A program assistant (\$6,000) and \$26,000 for cooperative training grants, surveys, and studies with other museums are requested.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

NATIONAL MUSEUM OF NATURAL HISTORY

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	258	10	268
11 Personnel Compensation.....	\$ 3,078,000	\$ 120,000	\$ 3,198,000
12 Personnel Benefits.....	231,000	9,000	240,000
21 Travel & Transp. of Persons ..	61,000	28,000	89,000
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	15,000	0	15,000
24 Printing and Reproduction	0	0	0
25 Other Services	90,000	32,000	122,000
26 Supplies and Materials	90,000	15,000	105,000
31 Equipment	109,000	52,000	161,000
TOTAL	<u>\$ 3,674,000</u>	<u>\$ 256,000</u>	<u>\$ 3,930,000</u>

Analysis of Total

Pay Increases	\$266,000	\$56,000	\$322,000
Program.....	\$3,408,000	\$200,000	\$3,608,000

Specification of Increase (Program):Electronic Data Processing for Collections Management (8 positions, \$105,000)

If this Museum is to continue to serve as a base for important research projects, it must make its collections and their accompanying data more accessible to researchers and scholars. Electronic data processing provides the only means by which this can be done. Several collections have been identified as being of particular importance--fossils, botany, invertebrates, and vertebrates. These collections are of importance because of their scientific significance as well as their use by oil geologists, forest breeders, oceanographers, and conservationists. To establish data banks for these collections will require eight museum technicians and specialists (\$55,000), and funds for supplies and materials (\$4,000), equipment (\$27,000), and other services (\$19,000).

Special Projects in Archeology, Biology, and Marine Sciences (2 positions, \$95,000)

The Museum has identified several projects as being particularly important because of their scientific merit and reference to current problems. A major archeological and ecological exploration of the Sistan is important because it will contribute to our knowledge of how a society is affected by a drastic change in its environment. A study of invertebrate organisms of Panama, to be done with the assistance of the Smithsonian Tropical Research Institute, provides an opportunity to study closely related organisms inhabiting adjacent but distinctive areas. A study of sea floor spreading and deep-sea rocks will provide an insight into the earth's crustal movements. For these projects, the Museum will require a petrologist and a scientific illustrator (\$18,000), and funds for travel (\$28,000), supplies and materials (\$11,000), equipment (\$25,000), and other services (\$13,000).

NATIONAL MUSEUM OF NATURAL HISTORY

1969 Actual	\$3,456,000
1970 Estimate	\$3,674,000
1971 Estimate	\$3,930,000

The National Museum of Natural History has been performing a comprehensive program of basic research for over 100 years. This research has been directed at obtaining a better understanding of man, plants, animals, and rocks, both recent and fossil. In pursuit of this end, in fiscal year 1969 the Museum's scientists engaged in approximately 340 research projects throughout the world and produced over 450 publications. Because the Museum directs its efforts at uncovering the basic facts, laws, and relationships that exist among plants, animals and the Earth, its work serves as a foundation for much of the applied research being carried on by others. For instance, a joint Smithsonian/National Institutes of Health program has been started to utilize the Institution's resources and collections to study the occurrence of abnormal cancer-like growths in lower animals in order to aid the search for cancer antibodies. Museum scientists have provided advice to dozens of federal agencies in subjects ranging from astronomy to pollution control; in fiscal year 1969, over 73,000 specimens from the collections were lent to scientists and researchers. In addition to their research roles, the Museum's staff develops and designs the many exhibits on public display in the Natural History building on the Mall.

In order to continue to fulfill its research responsibilities and provide assistance to the scientific community, an increase of \$200,000 is requested. This increase will be used to provide improved access to information in the collections, a major archeological/ecological project, a study of marine organisms in Panama, and a study of sea floor spreading. An additional \$56,000 are requested for necessary pay increases.

Need for Increase1. Electronic Data Processing for Collections Management

If this Museum is to continue to serve as a base for important research projects, it must make its collections and their accompanying data more accessible to the community of scholars. At the present time, information relating to these specimens can only be obtained by a time-consuming search through the collections themselves as well as through logs, journal books, and other records. This search often requires the expenditure of tens or hundreds of man-hours of professional and semiprofessional effort for a single project and leads to significant increases in project costs.

Electronic data processing (EDP) techniques provide the means by which the Museum may properly handle the increasing volume of specimens and specimen-related data. A pilot study in collections management has been underway through a two-year grant (ending June 1970) from the Department of Health, Education, and Welfare, with the collaboration of the Smithsonian's Information Systems Division. This study has determined that by the application of EDP techniques considerable savings in time and effort and significant improvements in the quality of research can be achieved.

It is proposed that EDP techniques be applied to those collections that are regarded as being of unusual importance because of their use, size, and relevance to research projects being conducted within the Smithsonian and elsewhere. Four projects of particular usefulness are the following.

Data bank for the collection of fossils (3 positions, \$30,000)

The collection of fossils in the Department of Paleobiology is the largest in the United States, and one of the most important in the world. This collection is used by scientists and researchers both here and abroad in studies involving the evolution of animal and plant organisms, locations, adaptation, and for comparative analysis of species of plants and animals. This information is essential, for instance, in oil exploration. No comprehensive study of fauna fossils can be made without reference to this collection, yet no catalog or card file on it is available. As a result, the scientific community cannot make full use of this material. Three museum technicians (\$20,000) and \$10,000 for supplies, equipment, and other services are required to establish a data bank of specimens. After the establishment of this data bank, the present staff would maintain and update the computer file as additional specimens are collected and identified.

Type register of botanical collections (1 position \$20,000)

A herbarium is a botanical Bureau of Standards, for the results of any botanical research project, whether it be a breeding program, an investigation into the physiology of forest trees, or an inquiry into processes of evolution, may be worthless if the researcher does not know the species with which he is dealing. The criteria for assigning a plant to a given species ultimately involves comparison with a single specimen known as the "type" which is the "standard" for that particular species or subspecies. Since there is a type specimen, not only for every species of flowering plant but also for every variety, the total number of types is very high--approximately 60,000 in the United States National Herbarium in the Smithsonian alone. Other types are scattered throughout the herbaria of the world.

The type register of the Smithsonian's Department of Botany is the first attempt to compile a catalog of types along with their locations and other information needed by the botanist. Important botanical institutions in the United States and abroad, such as the New York and Missouri Botanical Gardens, the Royal Botanic Gardens in Kew, England, and the National Museum of Canada, are cooperating in planning for, and will participate in, this project by interchanging information with the Smithsonian. A museum technician (\$9,000) and \$11,000 for travel, supplies, equipment, and other services are requested in order to establish a type register of botanical collections.

Data bank for the collections of invertebrates (3 positions, \$35,000)

The extensive collections maintained by the Department of Invertebrate Zoology are a potential source of an enormous amount of basic information on the distribution and ecology of the largest bulk of marine animals, the invertebrates. In their present state, these collections are essential to zoologists studying these organisms, but their utility as an environmental information resource has barely been tapped. The computer data base on crustacea, nematode worms, and cephalopod mollusks would first be broadened and then files for collecting station and ecological data relating to these collections would be developed. The completion of this project would enhance the value and use of the collection as an information resource to oceanographic investigations, including studies of food resources. Three museum technicians (\$17,000) and \$18,000 for supplies, equipment, and other services are requested for this project.

Data bank for higher animals and endangered species (1 position, \$20,000)

The Department of Vertebrate Zoology has more than 20,000 species of birds, mammals, reptiles, amphibians, and fish in its collections. For several years, data on some specimens of both previously accessioned birds and newly acquired fish, reptiles, amphibians, birds, and mammals have been cataloged on paper tape output typewriters in a catalog format compatible with computer processing.

Data on seabirds have already been stored, as well as on some specimens of rare and endangered species. Seabirds are important because they are a discrete ecological unit of animals which range widely over vast expanses of ocean. Their distribution and habits are of use to commercial and sport fishermen in locating exploitable fish schools as well as to scientists who are attempting to understand the complex interrelationships of oceanic life. However, the distribution and abundance of most species of seabirds remains unknown because the large volume of data on identified museum specimens cannot be easily processed by hand.

It is proposed to continue the computer entry of selected bird and mammal data for research use and to investigate the feasibility of storing data from other vertebrate collections in the computer. A museum specialist (\$9,000) and \$11,000 for supplies, equipment, and other services are needed to extend this coverage on a worldwide basis in response to the needs for current research and for enforcement of the Rare and Endangered Species Act passed in 1969. In addition, published catalogs of vertebrates in the National Collections would be updated since they range in age from five to 27 years, and then distributed to research scientists in this country and abroad.

2. Special Projects in Archeology, Biology, and Marine Sciences

The following projects have been chosen because of their importance to the scientific community and their relevance to current problems.

The Seistan project is a major interdisciplinary program to study an area that has had drastic changes in its climate over a period of several hundred years. A study of this area hopefully will reveal the social and economic stresses that occurred in this community and the reasons the community was unable to adapt to the changing climate.

The study of invertebrate animals in Panama is an attempt to understand how natural or manmade stresses affect the composition, distribution, and relationships of various species of invertebrate animals. Such a study would be of value in the evaluation of conditions that may cause long-term changes in the environment.

The study of sea floor spreading and deep-sea rocks is basic to an understanding of the geological behavior of the earth's crust. This project is significant because crustal movements have been shown to cause uprisings of large masses of land, alterations in coastlines, and many times, violent earthquakes.

Major archeological and ecological project in Seistan (\$40,000)

Seistan is the region of southwestern Afghanistan and southeastern Iran where large moving sand dunes, extensive salt flats, strong winds from 40 to 120 miles per hour, and temperatures from 130° F in summer to below 0° F in winter make the region almost uninhabitable except for the narrow valley of the Helmand River. However, from at least the 6th century B.C. until the 15th century A.D., this region of approximately 10,000 square miles was extensively populated and had been described as the "grainery of Asia." This is evidenced today by the ruins of dozens of fortified farm "communes," two cities, each nearly a mile square, and complex water distribution systems.

An intensive study of this site is of particular importance since it can reveal the basic reasons why a relatively complex and sophisticated society was unable to adapt to a change in its environment. Preliminary studies and field investigations begun in 1964 have been made to determine the feasibility of initiating a major ecological project. The nature of the ancient habitations in this region

clearly indicates the need for a broadly based study not limited simply to archeology but including extensive studies in ancient and contemporary hydrography and agriculture, together with basic research on geomorphology, climate, botany (especially archeobotany and palynology), zoology, and limnology of this region--all being closely interrelated factors in the ancient society which developed in this region and flourished until the 15th century.

This project will use the present staff of the National Museum of Natural History; however, \$40,000 are requested for support in the form of travel, equipment, supplies, and other services. The research program would be conducted in cooperation with the Afghani Government, the Kabul University Research Center, the Cartographic Institute, and the Helmand Valley Authority of Afghanistan. Scientific staffs from other institutions such as Harvard University, the University of Michigan, and Washington University in St. Louis will also participate in this project.

Invertebrate animals in coastal areas of Panama (1 position, \$30,000)

Little information is available on the invertebrates occurring on each side of the isthmus of Panama. This project would initiate fundamental studies on species composition, distribution, and the ecology of marine invertebrates in this area. Panama is of particular interest not only because of the possibility of vast fauna changes as a result of the construction of the proposed sea level canal, but also because it provides an opportunity to study closely related organisms inhabiting adjacent, but distinctive, habitats in tropical areas. The Gulf of Panama is an area of high productivity and upwelling, whereas the environment of the Caribbean appears to be more stable. Success of this project is dependent upon cooperation between the Museum, including its divisions of crustacea and mollusks, and the Smithsonian Tropical Research Institute.

The professional staff for this project will be drawn from the Museum. However, a scientific illustrator (\$6,000) will be needed to devote full time to the project. An additional \$24,000 are requested for support in the form of travel, equipment, supplies, and other services.

Sea floor spreading and the origin of deep-sea rocks (1 position, \$25,000)

This project will involve the study of the origin of deep-sea rocks and the establishment of a systematic collection of such rocks. The information in such a collection would be of importance in determining, for instance, changes in coastlines and shifts in the earth's crust that cause stresses leading to earthquakes. Also, since knowledge about rocks from the deep-sea floor is relatively new, the Museum's collection of deep-sea rocks (which is already one of the largest in the world) serves as a unique resource for understanding and exploiting the seas. Models of sea floor spreading and continental drift now being developed by a number of federal and private institutions are closely tied to the availability of a comprehensive collection and to accurate identifications of deep-sea rocks. The proposed program would permit the participation by Smithsonian scientists in voyages of ocean research vessels and other ships in order to do deep-sea sampling and to conduct laboratory studies and analyses of these samples.

A petrologist (\$13,000) and \$12,000 for travel, equipment, supplies, and other services support are requested for this project.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

NATIONAL AIR AND SPACE MUSEUM

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>41</u>	<u>4</u>	<u>45</u>
11 Personnel Compensation.....	\$ 356,000	\$ 37,000	\$ 393,000
12 Personnel Benefits.....	27,000	2,000	29,000
21 Travel & Transp. of Persons ..	14,000	2,000	16,000
22 Transportation of Things	25,000	7,000	32,000
23 Rent, Comm. and Utilities.....	3,000	0	3,000
24 Printing and Reproduction	5,000	0	5,000
25 Other Services	69,000	2,000	71,000
26 Supplies and Materials	35,000	2,000	37,000
31 Equipment	36,000	3,000	39,000
TOTAL.....	\$ <u>570,000</u>	\$ <u>55,000</u>	\$ <u>625,000</u>
<u>Analysis of Total</u>			
Pay Increases	\$40,000	\$5,000	\$45,000
Program.....	\$530,000	\$50,000	\$580,000

Specification of Increase (Program):Space Artifacts Program (4 positions, \$50,000)

More than two million persons a year are now visiting the Smithsonian's air and space displays to see such exciting objects as Apollo spacecraft and a one-pound lunar rock. These and many other historically and technologically important objects are being transferred to the Smithsonian under the terms of a 1967 agreement with the National Aeronautics and Space Administration. The NASA provided \$199,000 to start a program of preservation, exhibition, and loan of these objects. The Institution stretched these funds through fiscal year 1969, but they are now exhausted. The strong public interest and educational benefits in this program require that it continue. To do so, the Smithsonian requires a curator, a research assistant, and two support staff (\$34,000) and funds for travel to inspect prospective transfers (\$2,000), the shipping of objects (\$7,000), and services, supplies, and equipment to handle and preserve spacecraft (\$7,000).

NATIONAL AIR AND SPACE MUSEUM

1969 Actual	\$505,000
1970 Estimate.....	\$570,000
1971 Estimate.....	\$625,000

The National Air and Space Museum is the nation's center for exhibition, education, and research in the history and principles of air and space flight. It maintains the world's greatest collection of objects related to flight and is a unique resource for research in aviation and aerospace history, in flight science and technology, in the impact of man-flight on the cultural life and economy of America, and in the pioneering efforts of early aviators and astronauts. This growing collection now consists of more than 200 technically and historically important aircraft, more than 300 engines, 1,000 air and spacecraft models, and a vast array of related equipment. Supplementing the physical specimens are extensive holdings of records resulting from air and space research, development and operations, films, art works, and memorabilia that are available to students, historians, biographers, technicians, and engineers. Drawing upon these resources, the Museum produces exhibits portraying the past, present, and future of aeronautics in America.

An increase of \$50,000 is requested to continue the program of acquiring, preserving, and displaying important space objects. An additional \$5,000 are requested for necessary pay increases.

Need for Increase--The National Air and Space Museum was originally established as a museum concerned with aviation alone. The Act of July 19, 1966, extended the Museum's responsibility to include space history and technology. Under the provisions of the 1967 Agreement on Space Artifacts between the Smithsonian Institution and the National Aeronautics and Space Administration, the Museum has acquired priceless objects marking the successful accomplishments of the United States' space program.

The most significant of these specimens are placed on exhibit; for example, Apollo and Surveyor spacecraft, Apollo spacesuits, Saturn rocket engines, and a one-pound lunar rock from the Apollo 11 flight. The remainder of the exhibitable specimens are loaned to other museums, and through the United States Information Agency and the Department of Commerce for exhibit in U.S.-sponsored exhibits abroad. These exhibits represent the rapidly evolving technology of space flight. With the successful lunar landings in 1969, visitor attendance tripled in the Fall of 1969 compared with 1968. More than two million persons are now visiting air and space displays annually.

In view of wide public discussion as to the extent to which the United States may be involved in future space missions--whether there will be orbiting research laboratories, recoverable space boosters, extensive lunar explorations, or a landing on Mars--the Smithsonian has a unique opportunity to educate the public by exhibits of actual space material. Such exhibits require not only the display of objects but also an interpretation of the accomplishments and the resulting benefits to all mankind.

The collection of spacecraft and related materials is continually increasing. This program cannot be continued successfully within the Federal appropriation available to the Museum. Research and documentation of these artifacts for exhibit require specialized curatorial skills not now available. Because of the need for inspection of available materials stored in many locations throughout the country, considerable travel is required. Many objects are large and heavy, and costly to ship, and they require special services, supplies, and equipment for protection.

In fiscal year 1968, the NASA funded initial operations of the space artifacts program in the amount of \$199,000. This was a one-time contract for one-year budget. Funds were stretched over a second year in fiscal year 1969. These funds are no longer available. To meet the responsibilities of the NASA/Smithsonian agreement and to properly exhibit and display these artifacts to the American public, a minimum requirement of \$34,000 is needed for a curator, a secretary, a research assistant, and a clerk-typist. An additional \$16,000 are requested for travel, transportation of objects, supplies and materials, equipment, and other services.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

NATIONAL ZOOLOGICAL PARK

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>246</u>	<u>6</u>	<u>252</u>
11 Personnel Compensation.....	\$ 2,157,000	\$ 164,000	\$2,321,000
12 Personnel Benefits.....	165,000	12,000	177,000
21 Travel & Transp. of Persons ..	6,000	5,000	11,000
22 Transportation of Things	3,000	0	3,000
23 Rent, Comm. and Utilities.....	86,000	12,000	98,000
24 Printing and Reproduction	1,000	0	1,000
25 Other Services	39,000	3,000	42,000
26 Supplies and Materials	302,000	43,000	345,000
31 Equipment	<u>55,000</u>	<u>72,000</u>	<u>127,000</u>
TOTAL.....	<u>\$2,814,000</u>	<u>\$ 311,000</u>	<u>\$3,125,000</u>

Analysis of Total

Pay Increases	\$112,000	\$131,000	\$243,000
Program.....	<u>\$2,702,000</u>	<u>\$180,000</u>	<u>\$2,882,000</u>

Specification of Increase (Program): (Details on Following Pages)

Office of Director (4 positions, \$62,000)

Planning and Design Unit; staffing the Hospital-Research Building; increased costs of operating items.

Operations and Maintenance Department (1 position, \$68,000)

Steam distribution system; building and custodial supplies and materials; equipment replacement.

Department of Living Vertebrates (\$23,000)

Animal purchases; animal food; equipment replacement.

Scientific Research Department (1 position, \$9,000)

Animal care in laboratories.

Animal Health Department (\$18,000)

Medical data system.

NATIONAL ZOOLOGICAL PARK

1969 Actual.....	\$2,528,000*
1970 Estimate.....	\$2,814,000*
1971 Estimate.....	\$3,125,000

The National Zoological Park was founded by Congress in 1889 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 from all over the United States; and promotes scientific research, including biomedical programs, for advancement of science and the benefit of the animals so that visitors can enjoy them in prime health. To accomplish this mission, the Zoo is organized in five departments: Office of the Director; Operations and Maintenance; Living Vertebrates; Scientific Research; and Animal Health.

For fiscal year 1971, a program increase of \$180,000 is requested to establish a planning and design unit for construction and repair projects; to staff and operate the new Hospital-Research Building and other facilities; to operate the new heating plant and incinerator; to replace ground and animal care equipment items; to augment the animal purchase and food funds; and to install a system for adequate animal health records. An additional \$131,000 are required for necessary pay increases.

These increases are distributed in the following table. Specific details of organization, functions, and budget requirements are presented on the following pages.

(In thousands of dollars)	<u>1969</u>		<u>1970</u>		<u>1971</u>	
	<u>Pos.</u>	<u>Amount</u>	<u>Pos.</u>	<u>Amount</u>	<u>Pos.</u>	<u>Amount</u>
Office of Director.....	60	\$661	60	\$799	64	\$917
Operations and Maintenance..	97	924	99	989	100	1,099
Living Vertebrates.....	77	827	77	888	77	939
Scientific Research.....	5	59	5	68	6	79
Animal Health.....	5	57	5	70	5	91
Total.....	<u>244</u>	<u>\$2,528</u>	<u>246</u>	<u>\$2,814</u>	<u>252</u>	<u>\$3,125</u>

The number of zoo visitors increases annually. In 1969, approximately 5 million people visited the Zoo. A significant number of these visitors are in organized school groups from the metropolitan area and more distant points. The Zoo is increasingly used as a teaching site by teachers of biology and other natural sciences. The increased visitor load increases requirements for patrols, trash clean-up, washroom sanitation, first aid, and other services.

Continued improvements have been made in the collection of animals, which is one of the world's largest. As the collection evolves, the Zoo will present exhibits of greater visitor interest and, at the same time, give greater emphasis to species and groups which effectively demonstrate significant points of animal adaptations and behavior. Greater emphasis will be given also to increasing zoo births by pairing unmated animals and maintaining breeding groups. Not only is this good conservation practice; it is also essential in view of the increasing scarcity of many species and the high prices that must be paid to acquire them.

Construction and improvement programs have progressed with the following results. The east-west perimeter road, eliminating through traffic in the main section of the Park was completed in June 1964. The incinerator for the sanitary disposal of trash and waste materials was completed in June 1964. In February 1965, the remodeling and renovation of the Bird House was accomplished. In

June 1965, the new Great Flight Cage and two parking lots for 245 visitor cars were completed. A parking lot which accommodates 260 visitor cars and 24 buses was completed October 1965. Sewer construction, eliminating most of the pollution discharged into Rock Creek, was completed in June 1967. The remaining discharge, chiefly from waterfowl ponds, will be eliminated by construction funds appropriated in fiscal year 1968. The Deer Area was completed in November 1965. The Hardy Hoofed-Stock Area was completed in August 1966, and the Delicate Hoofed-Stock buildings No. 1 and 2 were completed in January 1967. The construction of the new Hospital-Research Building, started in June 1968, was completed in January 1970.

*Included in the District of Columbia budget.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

National Zoological Park
Office of Director

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>60</u>	<u>4</u>	<u>64</u>
11 Personnel Compensation.....	\$ 592,000	\$ 81,000	\$ 673,000
12 Personnel Benefits.....	44,000	6,000	50,000
21 Travel & Transp. of Persons ..	6,000	5,000	11,000
22 Transportation of Things	1,000	0	1,000
23 Rent, Comm. and Utilities.....	86,000	12,000	98,000
24 Printing and Reproduction	1,000	0	1,000
25 Other Services	25,000	3,000	28,000
26 Supplies and Materials	38,000	6,000	44,000
31 Equipment	<u>6,000</u>	<u>5,000</u>	<u>11,000</u>
TOTAL.....	<u>\$ 799,000</u>	<u>\$ 118,000</u>	<u>\$ 917,000</u>

Analysis of Total

Pay Increases	\$46,000	\$56,000	\$102,000
Program.....	\$753,000	\$62,000	\$815,000

Specification of Increase (Program):Planning and Design Unit (3 positions, \$28,000)

Experience gained during the construction and repair program has demonstrated the need to develop schematic designs and operating specifications before outside architects are employed, and to provide closer technical review of architectural design. There is also a growing need for in-house design capability to handle small projects, including designs and specifications for contract repairs. Request is for three positions (\$23,000); funds for travel (\$1,000); supplies (\$2,000); and equipment (\$2,000).

Staffing the Hospital-Research Building (1 position, \$11,000)

The Hospital-Research Building was completed and occupied in January 1970. Request is for a librarian to serve the new facilities (\$8,000), supplies (\$1,000), equipment (\$1,000), and books (\$1,000). The librarian will also have responsibility for the medical and pathological information system.

Increased Costs of Operating Items (\$23,000)

An increase in travel funds (\$4,000) is requested largely in connection with the animal acquisition program. An increase in utilities (\$12,000) is requested to operate the new heating plant and renovated incinerator which will be in operation for the heating season in fiscal year 1971. Funds also are requested for contractual services (\$3,000), supplies (\$3,000), and equipment (\$1,000) to cover the increased costs of these items.

National Zoological Park
Office of Director

The Office of the Director plans and directs all Zoo programs. It also coordinates the activities and functions of the Pathology Office; directs the protective service program; develops and maintains the Zoo's educational program; and furnishes general administrative services. The capital improvement program and the animal acquisition program are under the direction of this office. The Pathology Office performs histopathologic and gross pathologic diagnosis of disease in the animal collection. The protective services program enforces laws and regulations for the protection and safety of visitors, animals, and Government property. The education program is being implemented through informative labels, exhibits, lectures, guided tours, and cooperative programs with local school systems. Administrative services include personnel, budget, fiscal, supply, and procurement functions.

An increase of \$62,000 is requested to establish a planning and design unit for the construction program; to staff the Hospital-Research Building; and to cover increased costs of travel, utilities, contractual services, supplies, and equipment. An additional increase of \$56,000 is sought for necessary pay purposes.

Need for Increase - Funds for major new construction were not appropriated in fiscal years 1968, 1969, or 1970. Funds were appropriated, however, for continued planning and for essential renovation and repairs to existing facilities. Many small and medium-sized projects are involved requiring careful study, design, preparation of specifications, technical review, and coordination. To provide these services, it is requested that a small Planning and Design Unit be established, consisting of three new positions (an architect designer, a draftsman, and a clerk-typist) plus the presently employed staff engineer. This unit will coordinate all construction projects and prepare criteria for architectural design of major structures. Major contract drawings and specifications will continue to be prepared by architects, contracted for by the General Services Administration. The unit will design all miscellaneous, supplementary structures and facilities, such as small buildings, shelters, pens, runs, fences, and guard rails, and outdoor cages to conform to and be compatible with major completed and planned construction in the Master Plan. These three positions, with funds for travel, supplies, and equipment, will cost \$28,000.

The Hospital-Research Building was completed and occupied in January 1970. A library will be located in this new building to serve Zoo personnel, students, and researchers. The library, which will consist of book stacks and a reading room, will specialize in general natural history, taxonomy, animal behavior, and veterinary medicine. It will require the specialized training and abilities of a librarian. The librarian will also have responsibility for the medical and pathological information storage and retrieval system. Funds for books, supplies, and equipment are included in this request for \$11,000.

During the summer of 1969, the first phase of conversion of the heating plant from coal to gas was accomplished. The second phase, and the conversion of the incinerator to gas, is planned to be accomplished during the summer of 1970. Funds in the amount of \$12,000 are requested for utilities to operate the new heating plant.

An additional \$11,000 are requested for travel, largely in connection with the animal acquisition program, and for contractual services, supplies, and equipment associated with Director's Office operations. For the most part, these funds are required to meet rising costs.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

National Zoological Park
Operations and Maintenance

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	99	1	100
11 Personnel Compensation.....	\$ 781,000	\$ 46,000	\$ 827,000
12 Personnel Benefits.....	62,000	3,000	65,000
21 Travel & Transp. of Persons ..	0	0	0
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	0	0	0
24 Printing and Reproduction	0	0	0
25 Other Services	14,000	0	14,000
26 Supplies and Materials	115,000	22,000	137,000
31 Equipment	17,000	39,000	56,000
TOTAL.....	\$ 989,000	\$ 110,000	\$ 1,099,000

Analysis of Total

Pay Increases.....	\$28,000	\$42,000	\$70,000
Program.....	\$961,000	\$68,000	\$1,029,000

Specification of Increase (Program):Maintenance and Operations of the Physical Plant (1 position, \$68,000)

Delay in planned Zoo reconstruction makes it necessary to prolong the life of the old steam distribution system. This will require the services of one additional steamfitter (\$7,000) and additional funds for building and sundry supplies and materials (\$22,000) for the entire operations and maintenance program. An increase is also requested in the equipment allotment to permit scheduled replacement of major and minor equipment items, including the purchase of a front-end loader and a turf-type tractor (\$39,000).

National Zoological Park
Operations and Maintenance Department

The Operations and Maintenance Department has responsibility for all plant maintenance and supporting services. These include:

1. Operational services: automotive maintenance; operation of trucks and heavy equipment; trash collection; sweeping of streets and walks; snow removal; and janitorial services.
2. Maintenance: maintaining and repairing 14 major buildings and a wide range of cages and other facilities. This unit also performs renovation and minor construction, and builds nest boxes, shipping crates, exhibits, and other needed items.
3. Grounds: maintaining and improving the 156 acres of trees, lawns, shrubs, flower beds, and indoor plantings.
4. Air-heating: maintaining all heating plants and air conditioning in the buildings throughout the Park.

An increase of one position and \$68,000 are requested to provide for work-load increases in maintenance and operational services. An additional \$42,000 are requested for necessary pay increases.

Need for Increase--At present there is only one steamfitter available to maintain the pipes and equipment of the Zoo's heating system. Extensive overhaul of the old steam distribution system is necessary, of which only 25 percent has been completed. The present work backlog of 6,762 man hours requires the addition of one position (\$7,000).

Existing funds are not adequate to keep pace with rising supply costs and the increased maintenance requirements of additions to the physical plant, such as the new Hospital-Research Building. Additional building and custodial supplies and materials of all types are required (\$22,000).

For the past several years, the Zoo has been placing equipment items on planned replacement cycles. An increase of \$39,000 in the equipment allotment will allow additional equipment in the replacement cycle as well as cover rising costs. Also included are funds to replace the front-end-loader to be used by the transportation section throughout the Park, and to purchase a turf-type tractor with backhoe to be used by the grounds division.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

National Zoological Park
Department of Living Vertebrates

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>77</u>	<u>0</u>	<u>77</u>
11 Personnel Compensation.....	\$ 668,000	\$ 26,000	\$ 694,000
12 Personnel Benefits.....	50,000	2,000	52,000
21 Travel & Transp. of Persons ..	0	0	0
22 Transportation of Things	2,000	0	2,000
23 Rent, Comm. and Utilities.....	0	0	0
24 Printing and Reproduction	0	0	0
25 Other Services	0	0	0
26 Supplies and Materials	142,000	13,000	155,000
31 Equipment	<u>26,000</u>	<u>10,000</u>	<u>36,000</u>
TOTAL.....	<u>\$ 888,000</u>	<u>\$ 51,000</u>	<u>\$ 939,000</u>

Analysis of Total

Pay Increases	\$30,000	\$28,000	\$58,000
Program.....	<u>\$858,000</u>	<u>\$23,000</u>	<u>\$881,000</u>

Specification of Increase (Program):Acquisition of Animals and Increased Costs of Food and Supplies (\$23,000)

An increase in the animal purchase fund (\$8,000) is needed to meet the rapidly rising prices of rare animals. For instance, a purchase of a single group of rare deer cost \$19,000. Only \$25,000 are now available for animal purchases. An increase in the food allotment and sundry supplies (\$13,000) is requested to cover increased costs. Approximately \$126,000 are now being spent on animal food. Funds are requested to establish an equipment replacement allotment (\$2,000) for the animal care program. No funds are now available for the periodic replacement of approximately 200 pieces of equipment.

National Zoological Park
Department of Living Vertebrates

The Department of Living Vertebrates is responsible for approximately 3,200 animals of over 1,100 species, representing one of the largest and most varied collections of exotic animals in existence. To support this collection, the Department conducts an animal care program involving feeding, cleaning of cages, and exhibition. Included in the animal care program are pest control efforts to eliminate insects and rodents and a commissary program for ordering, receiving, storing, preparing, and delivering animal food, as well as raising special food items. In addition to these major activities, the staff collaborates with the Animal Health Department, the Scientific Research Department, and the Pathology Office to improve the medical treatment of animals, collection of medical data, evaluation of medical programs, and development, investigation, and support of various research programs.

An increase of \$23,000 is requested to cover the rapidly rising costs of animals, animal food, and sundry and uniform supplies, as well as to establish an equipment replacement allotment. An additional increase of \$28,000 is sought for necessary pay increases.

Need for Increase--The animal acquisition program is aimed at providing an adequate number of interesting and unusual specimens for a well-balanced and educational zoological collection. The present allotment for the acquisition of animals, which includes purchase prices and/or shipping charges, is \$25,000. An increase of \$8,000 is requested. There has been no increase in these funds since 1965. Animal prices have risen rapidly in the past five years. A purchase of a single group of rare deer cost \$19,000. In the past, the Zoo has relied heavily on gifts and exchanges. It is rarely possible, however, to stipulate the species, ages, sex, and condition of gifts; and exchanges are dependent on what other zoos have in surplus. These two methods tend to yield an unbalanced collection. The Zoo's collection objectives can be fulfilled only by purchasing animals of selected species.

Additional funds are requested for the food allotment to provide for steadily rising food prices. Approximately \$126,000 is now available to purchase animal food. The Commissary makes every effort to obtain surplus food at reduced prices, but this is frequently of low quality. The replacement prices for sundry supplies and uniforms also have risen sharply. Funds in the amount of \$13,000 are requested to cover the increased cost and usage of these items.

There are approximately 200 pieces of equipment all under \$1,000 each, located in various buildings, used for the care of animals. Funding of \$2,000 is requested to establish an efficient schedule of equipment replacement.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

National Zoological Park
Scientific Research Department

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	5	1	6
11 Personnel Compensation.....	\$ 60,000	\$ 8,000	\$ 68,000
12 Personnel Benefits.....	5,000	1,000	6,000
21 Travel & Transp. of Persons ..	0	0	0
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	0	0	0
24 Printing and Reproduction	0	0	0
25 Other Services	0	0	0
26 Supplies and Materials	1,000	1,000	2,000
31 Equipment	2,000	1,000	3,000
TOTAL	\$ 68,000	\$ 11,000	\$ 79,000

Analysis of Total

Pay Increases	\$3,000	\$2,000	\$5,000
Program	\$65,000	\$9,000	\$74,000

Specification of Increase (Program):Care of Research Animals (1 position, \$9,000)

The Hospital-Research Building was completed and occupied in January 1970. As the number of animals under study in the laboratories increases, an animal keeper will be required to assure that the best care is given to these animals. Request is for one position (\$7,000), funds for supplies (\$1,000), and equipment (\$1,000).

National Zoological Park
Scientific Research Department

The Scientific Research Department undertakes studies of animal behavior, reproduction, and nutrition. The National Zoological Park collection is a major scientific resource. For this reason, facilities and assistance are often provided to scientists from such federal agencies as the National Institutes of Health as well as from universities. The Zoo's own scientific studies add to man's understanding of the living world. Investigations undertaken in the Zoo and in the field have yielded numerous scientific publications. The work of the Scientific Research Department results in improved care of animals in the collection, as reflected in their well-being and reproduction. This work is also of benefit to other zoos and animal collections. In addition, the Scientific Research Department is of assistance to other organizations, including foreign governments concerned with wildlife management and conservation. The Department provides training and research opportunities for graduate students.

An increase of \$9,000 is requested to provide one position for the care of the animals under study in the laboratories. An additional \$2,000 are requested for necessary pay increases.

Need for Increase--The Hospital-Research Building was completed and occupied in January 1970. Planned research on the maintenance of mammals and birds in captivity can now be started. The research personnel using this facility will include guest investigators and graduate students from those laboratories and universities coordinating their research program with the National Zoological Park. Included are the Armed Forces Institute of Pathology, the George Washington University, the University of Pennsylvania, and others. One of the central problems in the maintenance of captive vertebrates concerns the propagation of rare and endangered species. The successful breeding of rare mammals requires that special research be conducted on space requirements, nutritional requirements, and reproductive physiology. As the number of animals under study in the laboratories increases, an animal keeper will be required to assure that the best care is given to these animals.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

National Zoological Park
Animal Health Department

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	5	0	5
11 Personnel Compensation.....	\$ 56,000	\$ 3,000	\$ 59,000
12 Personnel Benefits.....	4,000	0	4,000
21 Travel & Transp. of Persons ..	0	0	0
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	0	0	0
24 Printing and Reproduction	0	0	0
25 Other Services	0	0	0
26 Supplies and Materials	6,000	1,000	7,000
31 Equipment	4,000	17,000	21,000
TOTAL.....	\$ 70,000	\$ 21,000	\$ 91,000

Analysis of Total

Pay Increases	\$5,000	\$3,000	\$8,000
Program.....	\$65,000	\$18,000	\$83,000

Specification of Increase (Program):Improve the Utilization of Scientific and Medical Findings (\$18,000)

The clinical, pathological, and scientific programs generate large quantities of data, which must be systematically stored for ready retrieval to be of permanent value. A number of other government and private laboratories have adopted the Termatrix system for this purpose. Since data is exchanged with these laboratories, a compatible system is necessary. An increase will permit acquiring the basic equipment (\$15,000). Additional funds for medicines, glassware, and chemicals (\$1,000) and medical equipment (\$2,000) are requested.

National Zoological Park
Animal Health Department

The Animal Health Department is responsible for the maintenance of the health of the animal collection of 3,200 living specimens of 1,100 species. This requires: clinical treatment of illnesses and injuries; prophylactic procedures; using clinical pathological data to assist in diagnosis of diseases and formulation of effective treatment regimens; and collaboration in biomedical research directed toward a broader knowledge of disease processes in exotic animals and in their treatment. The staff of the Animal Health Department consults and collaborates with investigators from governmental agencies and academic institutions in the solution of problems of mutual interest.

An increase of \$18,000 is requested to establish an efficient data recording system and funds for supplies and other equipment to meet increased costs. An additional increase of \$3,000 is sought for necessary pay increases.

Need for Increase--The knowledge of disease in exotic animals stands in about the same position as did human medicine more than 100 years ago. A data storage and retrieval system will provide for maximum usefulness of scientific and medical findings. The Animal Health Department records approximately 4,000 entries per year on the medical records. The Pathology Office performs approximately 600 necropsies per year, which requires the entry of approximately 2,000 diagnoses. There are approximately 10,000 technical entries recorded on cards each year. The recorded data is now of limited value, because of the time required to locate information. Funds are requested to establish a Termatrix system. This is a simple, rapid system using light showing through minute coded holes in a card to locate and correlate data. The system will be maintained in the Hospital-Research facility and will be used by all scientific activities. It will allow immediate retrieval of specific records and permit correlation and statistical analysis of the recorded data. An amount of \$15,000 is requested for this purpose.

An increase of \$3,000 is requested to cover the costs of medicine, glassware, chemicals, etc., used by the Animal Health Department and to purchase medical equipment used in animal care and treatment.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

ANACOSTIA NEIGHBORHOOD MUSEUM

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>8</u>	<u>4</u>	<u>12</u>
11 Personnel Compensation.....	\$59,000	\$ 30,000	\$ 89,000
12 Personnel Benefits.....	5,000	2,000	7,000
21 Travel & Transp. of Persons ..	2,000	1,000	3,000
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	7,000	23,000	30,000
24 Printing and Reproduction	0	0	0
25 Other Services	2,000	0	2,000
26 Supplies and Materials	6,000	20,000	26,000
31 Equipment	<u>1,000</u>	<u>1,000</u>	<u>2,000</u>
TOTAL	<u>\$82,000</u>	<u>\$ 77,000</u>	<u>\$159,000</u>
<u>Analysis of Total</u>			
Pay Increases	\$4,000	\$2,000	\$6,000
Program.....	\$78,000	\$75,000	\$153,000

Specification of Increase (Program):Museum Education, Administration, and Operations (4 positions, \$75,000)

Community demands on the Museum for classes, workshops, and other museum-related education services have increased steadily since the Museum opened in September 1967. Since opening, 117,000 children and other community residents have participated in the Museum's activities. Part-time and volunteer help from the community has been used, but two full-time instructors (\$16,000) are required to put the class and workshop activities on a more regular basis. An assistant director and a clerk-typist (\$14,000) are requested to help develop programs, assist with administrative matters, plan exhibits that meet community needs, and work with other groups interested in setting up similar museums. Funds in the amount of \$45,000 are requested also for space rental and custodial, exhibit, and workshop supplies and equipment.

ANACOSTIA NEIGHBORHOOD MUSEUM

1969 Actual	\$42,000
1970 Estimate.....	\$82,000
1971 Estimate.....	\$159,000

The Anacostia Neighborhood Museum opened in September 1967 in one of Washington, D. C.'s deteriorated urban communities. This area has dilapidated housing, an exploding school population, low income and unemployed persons, and other characteristics of blighted urban areas in cities across America. The Museum was designed to enhance the quality of life in this community by offering meaningful learning experiences to the local residents, by interpreting the history and contributions of the community, and by involving children and adults in challenging opportunities for creative self-expression. Since opening, 117,000 children and other community residents have enjoyed and been educated by the Museum's exhibits, classes, lectures, films, and other projects designed for maximum public participation. Over 27,000 metropolitan school children toured the exhibit "The Sage of Anacostia," a graphic history of the life of Frederick Douglass.

To meet this enthusiastic response, an increase of \$75,000 is requested for the Museum for classroom and workshop activity, overall program administration and general costs of operations. An additional \$2,000 are requested for necessary pay increases.

Need for Increase--Within the past year, community demands on the Museum have increased steadily. The staff has worked closely with the Anacostia Model School Project, and the Museum's education program manager was elected to its Council and Governing Board. As a result of meetings held with principals, counselors, Community Reading Assistants, Head Start personnel, and special groups of teachers, many requests for specific workshops and classes have been made. Among those requests that have been met are: a four-week series of programs on Afro-American history for two sixth-grade classes; an art appreciation workshop for local teachers and Community Reading Assistants that focused on the making of paints from ordinary household items; the training of local recreation staff in ceramics and pottery; a series of International Hours for preschoolers which included the sampling of food from other countries; and story hours, films, and slide shows. Much of this work has been accomplished through the use of part-time and volunteer help. Many requests cannot be met. Two full-time instructors are requested to plan and conduct classes and workshops for children and adults in the community (\$16,000).

With increased public interest and participation in the Museum's activities, an assistant director and an additional clerk-typist are required. These employees will help plan and evaluate programs; assist with budget, personnel, and procurement matters; do research on exhibits' topics appropriate to community needs; and help with a large correspondence workload. Letters are received almost daily from other museums, community groups, and concerned citizens seeking advice and technical assistance in undertaking similar museums in their areas. The assistant director will be involved personally with these groups and will act as a liaison between the Anacostia Museum and other museums to keep abreast of museum education trends and apply those that are applicable and valuable to Anacostia's needs. Funds in the amount of \$14,000 are requested for these two employees.

Funds are also required for general expenses as private funding for regular operations declines. The Museum requires \$45,000 for space rental, maintenance and custodial supplies, exhibit and classroom supplies and materials, and a small amount of office and exhibit equipment.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

NATIONAL COLLECTION OF FINE ARTS-RENWICK GALLERY OF ART

<u>Object Class</u>	<u>1970 Base</u>	<u>1970 Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>56</u>	<u>4</u>	<u>60</u>
11 Personnel Compensation.....	\$580,000	\$ 31,000	\$611,000
12 Personnel Benefits.....	43,000	2,000	45,000
21 Travel & Transp. of Persons...	25,000	1,000	26,000
22 Transportation of Things.....	17,000	2,000	19,000
23 Rent, Comm. and Utilities.....	14,000	0	14,000
24 Printing and Reproduction.....	1,000	0	1,000
25 Other Services.....	174,000	27,000	201,000
26 Supplies and Materials.....	25,000	2,000	27,000
31 Equipment.....	106,000	47,000	153,000
42 Grants.....	58,000	0	58,000
TOTAL.....	<u>\$1,043,000</u>	<u>\$112,000</u>	<u>\$1,155,000</u>
<u>Analysis of Total</u>			
Pay Increases.....	\$43,000	\$12,000	\$55,000
Program.....	\$1,000,000	\$100,000	\$1,100,000

Specification of Increase (Program):Preparations for Opening the Renwick Gallery (4 positions, \$100,000)

Approximately \$2,000,000 of appropriated funds have been spent on renovating and restoring this historic building in order that it can also have a valuable functional use as a museum of arts, crafts, and design in an area of Washington that is a center of attraction for official visitors and the general public. Although much essential restoration work needs to be done this year and next, the Smithsonian is planning a partial public opening in mid-fiscal year 1971. To accomplish this, the Smithsonian is requesting a small staff--an exhibits specialist, two museum technicians, and a clerk-typist (\$21,000)--to assist the NCFE curatorial staff and funds for travel to obtain and ship collections, including loaned items; for services to prepare exhibits; and for the purchase of collections and exhibit equipment (\$79,000).

NATIONAL COLLECTION OF FINE ARTS-RENWICK GALLERY OF ART

1969 Actual	\$951,000
1970 Estimate	\$1,043,000
1971 Estimate	\$1,155,000

The National Collection of Fine Arts was established "to encourage the development of contemporary art and to effect the widest distribution and cultivation in matters of such art". To meet this responsibility, the NCFA acquires, exhibits, and makes available for study a significant collection of art, and related documentary materials, produced by artists of the United States. At present, some 11,000 paintings, sculptures, and decorative art objects are included in its exhibits and reference collections. Administered by the NCFA, the Renwick Gallery of Art is planned as an exhibition center of American crafts and design, and as a visitor center related to Blair House and the White House. Housed in the building originally designed for the Corcoran Gallery by James Renwick, Jr., it preserves an architectural landmark which simultaneously can have an important functional use in an area of Washington that is a center of attraction for public and official visitors.

An increase of \$100,000 is requested to prepare the Renwick Gallery for a public opening in fiscal year 1971. Funds in the amount of \$12,000 also are requested for necessary pay for the National Collection of Fine Art's present staff.

Need for Increase--Approximately \$2,000,000 of appropriated funds have been invested in the restoration and renovation of the building. According to the present schedule, this work will be sufficiently completed in fiscal year 1971 to permit an inaugural exhibition by mid-year. The Smithsonian is requesting an appropriation of \$300,000 of construction funds to complete the restoration project. Without concurrent provision of operating funds, however, it is likely that the building will remain closed. The continued efforts by the National Collection of Fine Arts to develop its public and scholarly functions, do not permit a major redirection of funds to the Renwick, although substantial staff time will be applied to this need.

The present high priority efforts to ready the physical structure for opening to the public require a companion effort to provide outstanding exhibits. The staff must select and acquire basic furnishings and equipment appropriate to the building including display cases and other Gallery furniture; seek out and obtain through gifts and purchases an outstanding American crafts and design collection; and initiate work on an exhibition program including obtaining commitments from donors and lenders of art. A number of exhibitions will be staged each year, drawing on the varied collections of the Smithsonian as well as other private or public collections.

With regard to likely official uses of the Gallery, the great reception room across the width of the building is potentially one of the finest in America. This room, the stairs leading to it, and an adjacent octagon room will be furnished to evoke the spirit of the 1860's and 70's, and will be an appropriate background for the uses of the President, visiting heads of state, official presentation activities of the Smithsonian, such as for important donors, and for other similar uses.

To permit preparing, opening, and maintaining the exhibition and other programs of the Gallery, the following additional staff and other resources are requested. An exhibits specialist, two museum technicians, and a clerk-typist are the basic personnel required (\$21,000). These would assist the National Collection of Fine Arts curatorial staff. Support funds are required for travel to obtain and ship collections, for services to prepare exhibits, and for the purchase of exhibit equipment and objects (\$79,000).

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

JOSEPH H. HIRSHHORN MUSEUM AND SCULPTURE GARDEN

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>13</u>	<u>7</u>	<u>20</u>
11 Personnel Compensation.....	\$129,000	\$ 50,000	\$ 179,000
12 Personnel Benefits.....	9,000	4,000	13,000
21 Travel & Transp. of Persons ..	11,000	14,000	25,000
22 Transportation of Things	8,000	12,000	20,000
23 Rent, Comm. and Utilities.....	29,000	44,000	73,000
24 Printing and Reproduction	4,000	2,000	6,000
25 Other Services	124,000	176,000	300,000
26 Supplies and Materials	16,000	34,000	50,000
31 Equipment	<u>17,000</u>	<u>43,000</u>	<u>60,000</u>
TOTAL.....	<u>\$347,000</u>	<u>\$ 379,000</u>	<u>\$ 726,000</u>
<u>Analysis of Total</u>			
Pay Increases	\$8,000	\$4,000	\$12,000
Program.....	\$339,000	\$375,000	\$714,000

Specification of Increase (Program):Preparation of Collections to meet Opening Deadline (7 positions, \$375,000)

Twelve hundred of the choicest paintings and pieces of sculpture have been chosen from the more than 7,000 items in the gift collection for exhibit when the Museum opens. These paintings and pieces of sculpture, valued at \$20 million, must be examined, photographed, cleaned, and, in some cases, restored prior to exhibit. The total cost of this effort, not including any additional paintings that might be contributed by Mr. Hirshhorn, is estimated at \$460,000, of which \$160,000 are requested in fiscal year 1971. In addition to the restoration effort, the staff must receive and process the more than 500 new works of art being added to the collection each year by Mr. Hirshhorn; conduct research and documentation for the opening; catalog the collection; and meet public inquiries such as requests for loans, photographs, and information. To do this, the Museum requires an increased staff consisting of a curator, two exhibit technicians, three museum technicians, and a clerk-typist (\$50,000). Additional funds are required for travel (\$14,000), transportation of objects (\$12,000), rental of storage space (\$44,000), printing (\$2,000), supplies and materials (\$34,000), equipment (\$43,000), and other services (\$16,000).

JOSEPH H. HIRSHHORN MUSEUM AND SCULPTURE GARDEN

1969 Actual	\$149,000
1970 Estimate	\$347,000
1971 Estimate	\$726,000

The Joseph H. Hirshhorn Museum and Sculpture Garden will display the collection of fine art donated by Joseph H. Hirshhorn to the United States for the benefit of the people. The Hirshhorn Collection is a unique collection of sculpture and paintings. The sculptures range historically from antiquity to the works of today's young creators. Its fine representation of African art is highlighted by a superb group of Benin bronzes. The Collection's paintings focus on the 20th century. From the works of precursors such as Thomas Eakins and Winslow Homer to the canvases of today, the course of painting in America is covered in depth. Complementing the American section is a strong selection of paintings by modern European masters and young contemporaries.

An increase of \$375,000 is requested to continue the preparation of the Collections. An additional \$4,000 are requested for necessary pay increases.

Need for Increase--Plans and specifications for the construction of the Joseph H. Hirshhorn Museum and Sculpture Garden have been revised to scale down the project to insure that it does not exceed the available funds. A bid award is expected in February 1970 with construction to begin in March. Based on this information, a thorough review of work necessary to complete the Museum and place it in operation has been made. It was on the basis of this information that reprogramming of \$150,000 for the use of the Hirshhorn Museum was requested and approved. It is clear that in order to bring this major new museum into existence, a dramatic step-up of operating program activity must take place during the two-year building construction period. This will require a very substantial increase in program funds over this period if a public opening date of October 1972 (nine months after the completion of the building) is to be met.

Major additional funding requirements are in two categories: preparation of the collections, and the acquisition of furnishings and special equipment for the building. In fiscal year 1971, the Museum is seeking additional funds to accelerate preparation of the collections.

Some 1,200 paintings and pieces of sculpture of the total gift collection of 7,000 items must be readied for exhibition. These will be the choicest pieces with an estimated value of \$20 million. Of these 1,200 items, 700 are paintings and 500 are sculpture pieces. A careful survey of the restoration and framing requirements of these items has disclosed the following:

1. 100 large paintings (6 to 15 feet) will need major restoration at an average cost of \$1,000 each (\$100,000) and 50 will require work at \$300 each (\$15,000).
2. 350 smaller paintings will require restoration at prices ranging from \$250 to \$500 (\$150,000).
3. 500 paintings must be framed at prices ranging from \$45 to \$200 for a total cost of \$57,000.
4. 400 sculpture pieces, including about 150 which are classed as monumental, will need restoration at prices ranging from \$100 to \$750. Estimated total cost of the job will be \$170,000 which includes protective display cases for the smaller pieces of fragile sculpture, and the construction of bases for approximately 170 items.

To meet part of these costs, an additional \$160,000 are requested to meet the Museum's opening date. This work must be greatly accelerated and a production rate of at least one item a day must be maintained. Since conservators are in short supply and one piece may take many weeks to restore, premium prices may have to be paid, although an intensive search will be made to locate additional conservators.

A commensurate increase in professional and technical staff is required to prepare for the Museum's opening and subsequent exhibition and research programs. This staff must: receive and process the approximate 500 new works of art being added to the collection each year by Mr. Hirshhorn; negotiate with conservators and other contractors, and follow up on work in progress; conduct research and documentation for the opening exhibition as well as continue with the cataloging of the entire collection; and continue the Museum's present public services such as loans, photographic requests, and research queries. Conservation, photography, and storage facilities also must be planned. Museum administrative, budget, personnel, and fiscal business must be handled. This increased staff will cost \$50,000 and will include a curator, two exhibits technicians, three museum technicians, and a clerk-typist. A gradual phased buildup of essential staff members over the next two years makes sense in lieu of current and future Museum needs.

An additional \$165,000 are requested for other contractual service costs related to the collections, the rental of warehouse space and warehouse services (moving items in and out of storage for inspection, conservation, framing, etc.), photography to document the collections for exhibits planning and research purposes, and protective packing for shipping once restoration has been performed. Major trips to art museums and galleries for research will be necessary as well as trips to various collection storage areas.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>38</u>	<u>5</u>	<u>43</u>
11 Personnel Compensation.....	\$339,000	\$ 54,000	\$ 393,000
12 Personnel Benefits.....	26,000	4,000	30,000
21 Travel & Transp. of Persons ..	15,000	6,000	21,000
22 Transportation of Things	3,000	3,000	6,000
23 Rent, Comm. and Utilities.....	17,000	5,000	22,000
24 Printing and Reproduction	0	0	0
25 Other Services	28,000	15,000	43,000
26 Supplies and Materials	22,000	10,000	32,000
31 Equipment	<u>10,000</u>	<u>14,000</u>	<u>24,000</u>
TOTAL	<u>\$460,000</u>	<u>\$ 111,000</u>	<u>\$ 571,000</u>

Analysis of Total

Pay Increases	\$21,000	\$11,000	\$32,000
Program.....	\$439,000	\$100,000	\$539,000

Specification of Increase (Program):Barro Colorado Island Environmental Monitoring (1 position, \$25,000)

Forty years of study on Barro Colorado Island give an irreplaceable foundation for developing a project for comprehending the dynamics of a tropical environment. A project to measure the magnitude, frequency, predictability, and importance of a number of environmental fluctuations would significantly increase our knowledge of tropical dynamics. A forest ecologist (\$12,000) will tie together the efforts of many in launching this effort. Support will include research-related travel and transportation (\$3,000), supplies, materials and equipment (\$6,000), and related contract services (\$4,000).

Comparative Marine Research (2 positions, \$32,000)

The natural resources for marine biology at STRI are unmatched. Cooperative research with other institutions on a number of key environmental problems depends directly on availability of new professional and support resources. Progress can be maintained with the addition of an invertebrate biologist (\$12,000), a laboratory technician to man Galeta station on the Atlantic coast of Panama (\$7,000), research-related travel and transportation (\$3,000), supplies, materials and equipment (\$5,000), and related contract services (\$5,000).

Buildings, Grounds, and Administration (2 positions, \$43,000)

With the spread of physical facilities and research in surrounding habitats, vehicle transportation is a constant bottleneck. One machinist (\$5,000) to repair and maintain vehicles, acquired largely as surplus property and used for field trips, is essential. Supporting supplies and contract services (\$5,000) are also needed to keep various mechanical apparatus in service for the present heavy and constant year-round demands placed on them. Rent, communications, and central contract services, including dependent's tuition and medical care, require \$11,000. Replacement of two ancient trucks and air-conditioners will cost \$9,000. Contract and grant negotiations, including cost recoveries, for productive collaborative work require a contract specialist (\$11,000) and travel (\$2,000).

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

1969 Actual	\$409,000
1970 Estimate	\$460,000
1971 Estimate	\$571,000

The principal function of the Smithsonian Tropical Research Institute (STRI) is to advance the frontiers of biology through intensive biological and ecological studies in the tropics. STRI's work serves a twofold purpose. First, understanding the earth's biology demands comprehension of the complex evolutionary and behavioral relationships of its most varied organisms, which are in the tropics. The tropics are the place of origin and principal center of evolution of most groups of organisms. New and major types of adaptation to new ways of life are more likely to be evolved by tropical species than by those of other regions. Tropical species also are more successful in invading other regions than are species of other regions in invading the tropics. In tropical areas, an abundance of observations, tests, assessments can be made every month of the year on change, competition, survival, and evolutionary success and failure.

Second, human populations in the tropics are increasing very rapidly, and are headed for ecological disaster in the absence of adequate information about their environment. In the north, we are concerned about air pollution, eutrophication of lakes, and the deleterious effects of insecticides. In the tropics, the problems are more brutal. Areas such as the hill country of Colombia and Panama, and the whole island of Madagascar, are fast becoming deserts. The basic features of tropical ecology must be understood as quickly as possible.

The staff scientists, research associates, pre and postdoctoral fellows, and visiting scientists and students from other institutions are attempting to describe the ecological and behavioral relationships among species in more precise quantitative, mathematical, or physical terms. More than 50 papers by STRI's staff in the past year are contributing to this knowledge. Research and study visits to the Institute climbed from 289 in 1966 to over 500 this past year, with the scientists and researchers remaining for longer and more productive work-stays.

An increase of \$100,000 is requested to develop and implement an environmental monitoring program; to provide for a strengthening of the marine biology program; and to improve the central services of the Institute. An additional \$11,000 are requested for necessary pay increases for the present staff.

Need for Increase--The principal center of terrestrial and fresh water research at STRI continues to be Barro Colorado Island, set aside as a preserve where men can join to understand a complex tropical environment. A host of separate studies have been conducted on the island over the past four decades, accelerating in recent years. It is probably better known than any comparable piece of land anywhere else in the tropics. This knowledge provides a unique foundation. The work to date represents an investment in professional time of irreplaceable import. Now we can build on it with a project of environmental monitoring--measuring the magnitude, frequency, predictability, and importance of a number of accessible environmental fluctuations. This can provide a key to one of the most essential questions in biology, How stable are the tropics and how does the answer tie in with evolutionary change? The project will be led by a forest ecologist (\$12,000) working in consort with present members of the staff. An additional \$13,000 are requested for travel, transportation, supplies and materials, equipment, and research support services.

The Smithsonian Tropical Research Institute is becoming increasingly active as a research base for marine scientists working in tropical waters. The biological richness of the area, the separation of two oceans by approximately 50 miles of land, the excellent accessibility of Panama, year-round opportunities

for test-organism breeding in food culture experiments, and many other factors yield a practical mandate for developing and refining a quality program in marine biology. A marine invertebrate biologist (\$12,000) is requested to assure continued steady progress of the Institute's tropical marine research program and its advanced scientific training program. One laboratory technician (\$7,000) is needed to permit the fuller use of the unique Galeta marine station, located on the Atlantic coast of Panama. Funds for travel, transportation, supplies, equipment, and other costs are also requested (\$13,000).

Central services have been strained to keep pace with current demands and the growth of the research program. One machinist (\$5,000) is requested to keep the small fleet of largely surplus vehicles, used for field work by the scientists, in proper operating condition. An additional \$25,000 are requested for supplies, rent, communications, contractual services (including mandatory school tuition and medical services for dependents), and the replacement of two worn-out vehicles and air conditioners. The addition of a contracts specialist (\$11,000) will improve STRI's ability to enter into reimbursable contract relationships with the many agencies, institutions, and centers that seek professional assistance in tackling problems concerning research and advanced training. An increase of \$2,000 is requested for travel support.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

RADIATION BIOLOGY LABORATORY

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>36</u>	<u>4</u>	<u>40</u>
11 Personnel Compensation.....	\$ 372,000	\$ 47,000	\$ 419,000
12 Personnel Benefits.....	31,000	3,000	34,000
21 Travel & Transp. of Persons ..	5,000	0	5,000
22 Transportation of Things	2,000	0	2,000
23 Rent, Comm. and Utilities.....	256,000	101,000	357,000
24 Printing and Reproduction	0	0	0
25 Other Services	20,000	3,000	23,000
26 Supplies and Materials	24,000	5,000	29,000
31 Equipment	<u>79,000</u>	<u>50,000</u>	<u>129,000</u>
TOTAL.....	<u>\$ 789,000</u>	<u>\$ 209,000</u>	<u>\$ 998,000</u>

Analysis of Total

Pay Increases	\$35,000	\$9,000	\$44,000
Program.....	\$754,000	\$200,000	\$954,000

Specification of Increase (Program):Basic Mechanical and Support Staff at the New Location (4 positions, \$200,000)

Fiscal year 1971 will be the first full year of operations in the new laboratory building in Rockville, Md. For the first time since the Laboratory's establishment in 1929, it has available a properly configured space of adequate size. The increased funding provided in the fiscal year 1970 appropriation will meet the basic costs of the lease and part of the mechanical and support staff required at the new location. However, other building and operating costs were not met:

- 24-hour service support is needed to maintain the 11 cold rooms, 40 growth chambers, 8 walk-in environmental chambers, and a greenhouse.
- Basic custodial supplies, materials, and equipment are needed to clean the area to prevent safety hazards and to maintain the degree of cleanliness needed by the precision equipment.
- Substantial utility costs will be incurred to operate the laboratory and electrical equipment.
- Library services must be provided since the Smithsonian Institution Library cannot provide service at the Laboratory's new location.
- 50 percent of the Laboratory's equipment is more than eight years old and in need of replacement.
- Security of the building, which has five outside entrances, must be provided to insure protection of the equipment and chemicals.

Two operating engineers, an electrician, and a library technician (\$41,000) and funds for utilities, services, supplies, and equipment(\$159,000) are requested.

RADIATION BIOLOGY LABORATORY

1969 Actual.....	\$399,000
1970 Estimate.....	\$789,000
1971 Estimate.....	\$998,000

The program of the Radiation Biology Laboratory, fundamentally concerned with the effects of the sun's energy on Earth's life, has been devoted to the study of the responses of living organisms to various qualities and intensities of radiant energy and to the determination of the influence of various factors in the environment--light, temperature, humidity, and atmospheric content--on growth and development cycles of plants. As a corollary to the serious concern with regard to the deleterious effects of air pollutants on living systems, there has been speculation that less of the sun's energy is reaching the Earth's surface. Recent comparisons with data gathered by the Smithsonian at the turn of the century indicate that the decrease in solar energy may be as much as 16 percent. This investigation is continuing. There are essentially no data available to indicate what the long-term effects of such a reduction will be upon crop and food production. The Laboratory's program of solar energy measurements and biological response correlation fills a significant gap in efforts to provide understanding of the interacting factors that man must adjust and control in order to maintain a habitable environment. The Laboratory has been credited with major contributions in photobiology which include the first detailed action spectra of such diverse responses as photosynthesis, photocontrol of seedgermination, the induction and reversal of photomorphogenesis, and phototropism.

An increase of \$200,000 is requested in order to complete the relocation requirements of the Laboratory at the new Rockville, Md., site. Funds in the amount of \$9,000 are also requested for necessary pay.

Need for Increase--Fiscal year 1971 will be the first full year of operations in the new laboratory building in Rockville, Md. The move is now scheduled to be completed by March 1970. For the first time since the Laboratory's establishment in 1929, it will be provided with properly configured space of adequate size. A significant base for improved research capability has been provided. To assure the successful use of this new space for scientific investigations, additional funding is requested for the basic operation of the building and for research support.

Increased funding, provided in the fiscal year 1970 appropriation, will meet the basic cost of the lease and part of the mechanical and service support staff required. Other building and operating costs will not be met. The lease for the new building costs \$256,000 annually. An additional amount will be required to pay for the GSA administrative charge, which has yet to be determined. The new laboratory area is at least one-third greater than the inadequate space in the Smithsonian Institution building previously occupied. It will include 11 cold rooms, 40 large growth chambers, 8 walk-in environmental chambers, and a large controlled environment greenhouse. Mechanical and service support for the operation of these facilities on a 24-hour continuous basis is essential. Two operating engineers (mechanical and refrigeration) and an electrician to maintain and operate the facilities and complex laboratory equipment are required (\$33,000).

Basic custodial supplies, materials, and equipment will be needed to clean and maintain the new building space. A laboratory has unusually heavy demands for maintaining working areas clean and well lighted because of the inherent safety hazards of handling chemicals and equipment, as well as requirements for precision measurements. An amount of \$5,000 is requested for cleaning materials and lamp replacements.

Substantial utility costs will be incurred for electrical power for laboratory and refrigeration equipment and to light controlled plant growing rooms, as well as for conventional lighting for the 50,000 square ft. building. Telephone, water, gas, sewage, and trash disposal services must also be provided. An additional \$101,000 are requested to provide for these services.

Security of the building, with five outside entrances, can most economically be achieved by the use of an automatic electronic alarm system. A guard system would require a minimum of five men and \$30,000 to achieve the same results. Contractual service funds in an amount of \$3,000 are requested for security costs.

Library services will be needed at the new location because the Institution's regular library staff will not be able to supply service at the Laboratory's new location. At the present time, there is no library service; secretarial time, as available, is used to keep shelves in order. A full-time library technician is requested to maintain the present literature collection; recommend new publications; furnish information with regard to acquisitions; catalog and file published material authored by staff members; fill requests for reprints; meet requests from research staff for literature citations; arrange for loans from other libraries; and provide other library services (\$8,000).

Equipment deficiencies will retard the Laboratory's research activities. Fifty percent of RBL's scientific equipment, including spectrophotometers, radiation devices, monochromators, autoclaves, centrifuges, and other instruments are more than eight years old and in need of replacement. The present equipment has been screened and careful determinations made with respect to the costs of relocation and modernization versus construction and purchase of new equipment. The bulk of the present equipment is being relocated; but many items, particularly those which had been installed or built into the previous quarters, can be more economically purchased new. A continuing effort is being made to obtain equipment available from federal surplus lists and by the purchase of second-hand laboratory benches and exhaust fume hoods, as such items become available. However, even with these considerable savings, \$50,000 will be required for basic equipment needs.

It should be reemphasized that the requested increases outlined are a minimum to operate, maintain, and protect new and larger building spaces at a working level. The needs included do not represent program expansion.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

OFFICE OF ECOLOGY

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>5</u>	<u>3</u>	<u>8</u>
11 Personnel Compensation.....	\$101,000	\$ 28,000	\$ 129,000
12 Personnel Benefits.....	7,000	2,000	9,000
21 Travel & Transp. of Persons ..	7,000	2,000	9,000
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	0	0	0
24 Printing and Reproduction	0	0	0
25 Other Services	10,000	6,000	16,000
26 Supplies and Materials	2,000	9,000	11,000
31 Equipment	6,000	10,000	16,000
TOTAL.....	<u>\$133,000</u>	<u>\$ 57,000</u>	<u>\$ 190,000</u>

Analysis of Total

Pay Increases	\$5,000	\$2,000	\$7,000
Program.....	\$128,000	\$55,000	\$183,000

Specification of Increase (Program):Comprehensive Ecological Study of the Chesapeake Bay Watershed
(2 positions, \$49,000)

The Chesapeake Bay area has considerable historic, recreational, and economic importance. Yet, this area is being subjected to vast changes in its ecology due to industrialization, housing development, and thermal and chemical pollution. Basic to any understanding of the problem or its solution is a comprehensive study of the watershed, including studies to determine energy output, biological productivity of the land and water areas, and pollution effects upon terrestrial and aquatic life. The Chesapeake Bay Center for Environmental Sciences, using its facilities as a base, proposes to conduct such a comprehensive study in order to better understand this valuable area. To do this, the Center requires a resident ecologist, a program assistant (\$22,000) and funds for travel (\$2,000), supplies and equipment (\$19,000), and other services (\$6,000).

Improved Security for the Chesapeake Bay Center for Environmental Sciences
(1 position, \$6,000)

The Center's utility to scientists depends upon the land and water areas remaining in an undisturbed state. Picnickers, poachers, vandals, and other trespassers have, on occasion, disturbed the ecology as well as carefully designed experiments set up in the area. To prevent such occurrences, a security officer (\$6,000) is required to patrol the area and the buildings.

OFFICE OF ECOLOGY

1969 Actual	\$110,000
1970 Estimate	\$133,000
1971 Estimate	\$190,000

The Office of Ecology was established to support and coordinate research within various bureaus of the Smithsonian and with other organizations. It provides project planning, guides ecological studies, develops and assists international ecological and conservation projects, and helps in the biocommunications area with ecological symposia and conferences. The Office facilitates the use of the Smithsonian's resources by biologists, ecologists, and other scientists. Competence in radiobiology, biology, and earth sciences is available. The Smithsonian is unique in having some of the largest natural history collections in the world, which are required for precise identifications of ecosystem components. In addition, Smithsonian natural preserves in the tropics (Smithsonian Tropical Research Institute) and the temperate zone (Chesapeake Bay Center for Environmental Sciences) provide strategic sites for ecological field studies.

An increase of \$55,000 is requested to provide for a resident ecologist, a program assistant, a security officer, and support funds for a comprehensive ecological program at the Chesapeake Bay Center for Environmental Sciences. An additional \$2,000 are requested for necessary pay increases for the present staff.

Need for Increase--The Chesapeake Bay Center for Environmental Sciences was established to provide an easily accessible and protected area in which ecological and environmental research could be conducted. Projects at the Bay Center are carefully chosen for their merit and to assure that they complement rather than duplicate work being done elsewhere. The variety of ecosystems, including marshes, abandoned pastures, upland hardwood forests, and cultivated land at the Center, are used by scientists from various bureaus of the Smithsonian, federal and state agencies, and a consortium of universities for studies covering a wide variety of subjects.

A comprehensive ecological study is needed of the Chesapeake Bay watershed. This area has considerable economic importance, and is being subjected to increasing amounts of thermal and chemical pollution. The program would include studies to determine energy output, the total biological productivity of the land and the estuary, and the effects of pollution. Essential to this study is the research program at the Chesapeake Bay Center, a summary of which is shown on the following page. A resident ecologist, program assistant (\$22,000), and \$27,000 for support in the form of travel, supplies, equipment, and other services are requested to develop, coordinate, and implement this comprehensive ecological study of the Chesapeake Bay watershed. Under their direction and guidance, scientists from the Smithsonian and elsewhere would engage in a systematic study of the Chesapeake Bay area around the Center and in other selected areas of scientific interest.

The Center's utility to scientists depends upon the land and water areas remaining undisturbed. However, in the past, picnickers, poachers, vandals, and other trespassers have disturbed the land and water area and the carefully designed experiments set up through the Center. For this reason, a security officer (\$6,000) is requested to provide the proper protection for the Center's facilities and experiments.

Chesapeake Bay Center for Environmental Sciences
Examples of Research Projects Being Conducted

Estuarine Studies

Water quality including the measurement of temperature, salinity, PH, conductivity, and dissolved oxygen and nutrients such as ammonia, nitrates, nitrite-nitrogen, polyphosphates, orthophosphates.

Fish populations, varieties, distribution, rate of growth, and predator-prey relationships.

The productivity of plankton in the estuary and its tributaries.

The distribution and abundance of native and introduced aquatic vegetation.

Studies of the epifauna community.

Bacterial characteristics of the water.

Bottom sedimentology and bathymetry in the estuary.

Terrestrial Studies

Ecology of birds, especially ducks, geese, and swans.

Studies of terrestrial plants and animals.

Vegetation mapping.

Population studies of terrestrial birds and their relation to successional plant communities.

Underlying mechanisms of vegetation change.

Diseases of Plants and Animals

Host-parasite relationships of birds, viruses, and blood parasites.

Diseases of aquatic plants.

Pesticide residues in plants, animals, and birds.

Archeology

Field work into the 35-40 sites, identified so far on the Center's property, that date as far back as 500 B. C.

Land-Use History

Research into previous occupancy and the utilization of the land in order to understand the present nature, distribution, and abundance of plant and animal communities.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

OFFICE OF OCEANOGRAPHY AND LIMNOLOGY

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	18	8	26
11 Personnel Compensation.....	\$253,000	\$ 68,000	\$ 321,000
12 Personnel Benefits.....	19,000	5,000	24,000
21 Travel & Transp. of Persons ..	5,000	5,000	10,000
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	4,000	2,000	6,000
24 Printing and Reproduction	0	0	0
25 Other Services	40,000	40,000	80,000
26 Supplies and Materials	7,000	20,000	27,000
31 Equipment	8,000	20,000	28,000
TOTAL.....	\$336,000	\$ 160,000	\$ 496,000
<u>Analysis of Total</u>			
Pay Increases.....	\$18,000	\$10,000	\$28,000
Program.....	\$318,000	\$150,000	\$468,000

Specification of Increase (Program):Smithsonian Oceanographic Sorting Center (8 positions, \$150,000)

The Sorting Center processes marine samples for use by more than 300 scientists in 27 countries in their research projects ranging from taxonomic studies to pollution control. In the past year, the Center sorted 3,500,000 specimens for 289 researchers, 55 of whom were in federal agencies. In addition, the Center provides advice and assistance on specimen-related activities such as field collection and the disposition of sorted samples in repositories. The Center has made concerted efforts to improve its productivity and efficiency. However, the increased number of samples sent to the Center, coupled with an increased demand for specimens, has created a large backlog of unsorted material. Unless these samples are processed soon, many of them will deteriorate to the point of uselessness for research purposes. To raise the capacity of the Center to the point where it can meet the demand for specimens, the Center requires seven sorter-technicians and a chemist (\$63,000), funds for travel (\$5,000), utilities (\$2,000), supplies, materials, and equipment (\$40,000), and other services (\$40,000).

OFFICE OF OCEANOGRAPHY AND LIMNOLOGY

1969 Actual	\$310,000
1970 Estimate.....	\$336,000
1971 Estimate.....	\$496,000

The Office of Oceanography and Limnology was established to provide increased knowledge of the oceans and fresh waters that comprise 71 percent of our planet. Through its sorting centers in Washington, D. C., and in Tunisia (the latter principally supported by the foreign currency program), the Office serves as a substantial producer and repository of biological and geological data for federal and private users and broadens the ability of scientists to respond to national needs. The Office also facilitates the productive involvement of Smithsonian and other scientists and research organizations in marine and freshwater research by providing a focal point for their effective use of Smithsonian resources. Emphasis has been given to assisting investigators in the problems associated with the consequences of environmental modification, including such biological changes as may result from the connection of the two oceans, problems of nearshore modification, and pollution.

An increase of \$150,000 is requested to strengthen the operations of the Smithsonian Oceanographic Sorting Center. Funds in the amount of \$10,000 are requested for necessary pay increases for the Office's present staff.

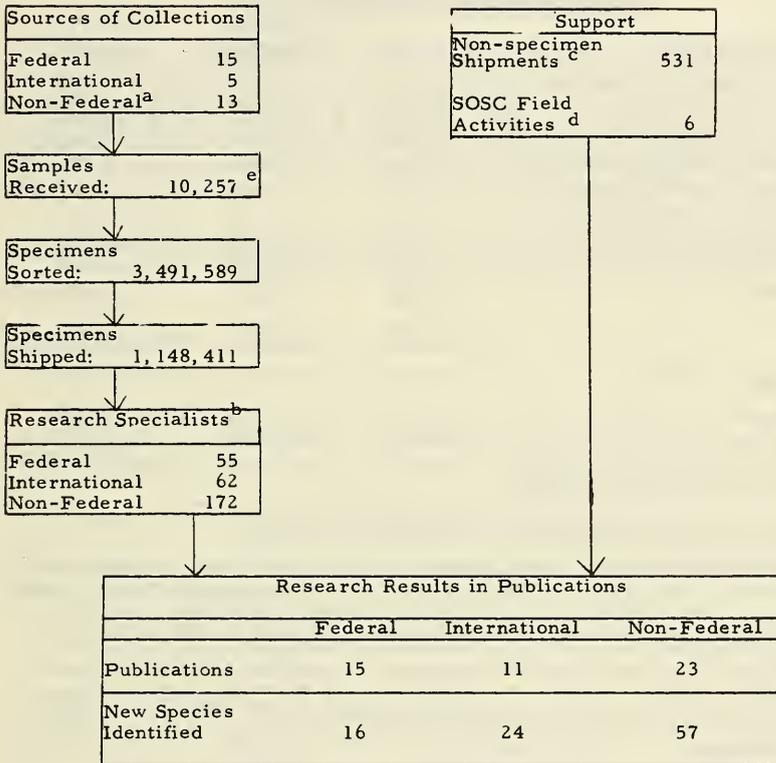
Need for Increase--The Office of Oceanography and Limnology operates the Smithsonian Oceanographic Sorting Center, which processes marine specimens from United States and international expeditions for use by more than 300 scientists from 27 countries in specimen-related research. The Center provides marine biological and geological identification services and serves as a national referral service for all kinds of specimen-based activities, from field collecting to the disposition of identified species in permanent repositories. The Center receives bulk samples, including station data (water, temperature, salinity, etc.), from governmental and private sources, sorts them into appropriate groupings, and sends them, upon request, to researchers and scientists for use in various research projects. A summary of the activities of the Sorting Center during fiscal year 1969 is shown on the following page.

The Sorting Center has made concerted efforts to improve its productivity. An automatic data processing system for specimen records has been started. Many manual operations--including the preparation of labels, inventory cards, and shipping documents--have been automated. Many instruments and scientific devices have been acquired or fabricated by the Sorting Center to improve efficiency and, when possible, have been purchased through government surplus sources to cut costs. Field manuals for the identification of the common and important species are being developed, as well as new techniques for the preservation and fixation of marine biological specimens.

Even after instituting these efficiencies, the Center is unable to meet the increasing demand from colleges, universities, and federal agencies for specimens. Backlogs of unsorted samples now exist for specimens gathered from the Great Lakes and several important oceanic expeditions. The backlog is due primarily to the fact that the present staff is unable to process and sort the more than 10,000 samples being received annually. Unless these backlogged samples are sorted soon, many will deteriorate to the point of being useless for research.

In order to alleviate this backlog, \$63,000 are requested for eight positions to be used for sorter-technicians and a chemist who will be employed to process and preserve the large number of specimens at the Center. Support funds in the amount of \$87,000 are requested to provide services, supplies, and equipment essential to sort, package, and distribute specimens, travel, and rental of equipment.

Smithsonian Oceanographic Sorting Center
Fiscal Year 1969



In addition to supplying 55 Federal organizations and specialists with specimens through the Sorting Center, the Office of Oceanography and Limnology has worked closely with the President's National Council on Marine Resources and Engineering Development through participation in its committees and panels, and also with the National Water Commission by developing an Ecological Review Panel to assist the Commission in developing their study. It has also responded to many requests for aquatic data from the Departments of Interior, Navy, State, Army, Transportation, and Health, Education, and Welfare, and the Atomic Energy Commission, and has assisted the Corps of Engineers in the development and evaluation of pollution studies.

- ^a United States and foreign colleges, universities, institutes, and others.
^b Approved by SOSC Advisory Committees.
^c Supplies and collecting gear for expeditions, cruise reports, data summaries and charts, bottom photographs.
^d Participation in cruises and expeditions.
^e Samples vary in size from test tubes to thousands of gallons in drums.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

CENTER FOR THE STUDY OF MAN

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>2</u>	<u>3</u>	<u>5</u>
11 Personnel Compensation..... \$	27,000	\$ 24,000	\$ 51,000
12 Personnel Benefits.....	2,000	2,000	4,000
21 Travel & Transp. of Persons ..	2,000	5,000	7,000
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	0	0	0
24 Printing and Reproduction	0	0	0
25 Other Services	81,000	18,000	99,000
26 Supplies and Materials	0	0	0
31 Equipment	1,000	2,000	3,000
TOTAL	\$ 113,000	\$ 51,000	\$ 164,000

Analysis of Total

Pay Increases	\$2,000	\$1,000	\$3,000
Program.....	\$111,000	\$50,000	\$161,000

Specification of Increase (Program):Handbook of North American Indians (3 positions, \$45,000)

This Handbook will be an encyclopedia of 15 or more volumes, summarizing all that is known of the prehistory and history of all Indian groups north of Mexico. Work up to now has been directed at preliminary planning activities--lists of 2,000 potential contributors have been compiled, consultations and meetings to develop the Handbook's format and contents have been held, and procedures to screen and check the manuscripts developed. It is now time for the actual work on the Handbook to begin. To do this, the Center for the Study of Man requires an editor, a research assistant, and a clerk-typist (\$25,000), funds for travel to meet with scholars and researchers (\$5,000), equipment (\$2,000), and other services (\$18,000).

Urgent Anthropology Small Grants Program (\$5,000)

The primary purpose of this program is to gather data on cultures or sub-cultures that are rapidly changing or disappearing due to economic or technological pressures. By awarding small grants from \$100 to \$1,000, qualified investigators are enabled to carry out research before the changes become so pronounced as to make research difficult, if not impossible. In addition, the small grants program provides the Smithsonian with valuable data at far less cost than possible by other means. This request is for \$5,000 to be used for a number of small grants in urgent anthropology.

CENTER FOR THE STUDY OF MAN

1969 Actual	\$82,000
1970 Estimate	\$113,000
1971 Estimate	\$164,000

The Center for the Study of Man was established in 1968 to foster and coordinate interdisciplinary research, education, and service efforts involving scientists and historians from the Smithsonian and other institutions in this country and abroad, to facilitate the study of man on a worldwide scale. Its special concern is the development of the human sciences as they deal with all cultures and peoples from the earliest times to the present and the relevance of anthropological knowledge to major problems which beset mankind.

An increase of \$50,000 is requested to continue work on the revision of the Handbook of North American Indians and to fund an Urgent Anthropology Small Grants Program. An additional \$1,000 are sought to help meet necessary pay increases.

Need for Increase1. Handbook of North American Indians (3 positions, \$45,000)

The Handbook will be an encyclopedia of 15 or more volumes, summarizing all that is known of the prehistory and history of traditional and modern cultures of all the Indian groups north of Mexico. The new Handbook will utilize the resources of the Institution--scientific staff, manuscript and picture archives, library, and museum collections--which are unexcelled as a basis for this project--to update and replace the previous standard encyclopedic work on this topic which was issued by the Smithsonian in 1907-1910. The revised Handbook will become the standard reference work on all aspects of North American Indian history and cultures for students, teachers, authors, researchers, and administrators, both Indian and nonIndian.

The plans for the new Handbook were first announced in 1966. Since then, work on the revisions has been directed at preliminary planning activities--lists of some 2,000 potential contributors have been compiled; consultations held on organizing the Handbook's contents; and procedures to screen and check manuscripts developed. The Handbook is now at the stage where actual work on the book can begin. Any delays will cause the disillusionment of the academic community whose support as contributors and advisors is essential. An amount of \$25,000 is requested to provide for an editor, a research assistant, and a clerk-typist. An additional \$20,000 will be required for travel, equipment, short-term research contracts, and other services.

2. Urgent Anthropology Small Grants Program (\$5,000)

The primary purpose of this program is to gather data on cultures or subcultures that are rapidly changing or disappearing as a result of economic or technological pressures. By awarding small grants, from \$100 to \$1,000, it enables qualified investigators in many areas to carry out urgent research on groups while they still exist as distinct entities. Results of these studies may have bearing on the solution of social and economic problems. A pilot project consisting of a series of small awards, made from grant funds (usually on a matching basis with other institutions), over the past several years has proved highly successful, frequently taking advantage of researchers who happen to be on the scene. A \$300 grant to a VISTA volunteer working in an Eskimo village enabled him to document changes to the traditional culture of a village caused by industrialization. Another grant of only \$150 provided for the recording on film and tape of traditional music of the native people of the Eastern Caroline Islands. Both of these projects provided the Smithsonian with valuable data at far less cost than obtainable by other means. Similar grants would be made under this program.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

CENTER FOR SHORT-LIVED PHENOMENA

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>0</u>	<u>1</u>	<u>1</u>
11 Personnel Compensation.....\$	0	\$ 6,000	\$ 6,000
12 Personnel Benefits.....	0	1,000	1,000
21 Travel & Transp. of Persons ..	0	0	0
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	10,000	8,000	18,000
24 Printing and Reproduction	0	6,000	6,000
25 Other Services	0	2,000	2,000
26 Supplies and Materials	0	2,000	2,000
31 Equipment	0	0	0
TOTAL.....	<u>\$10,000</u>	<u>\$ 25,000</u>	<u>\$ 35,000</u>

Analysis of Total

Pay Increases	0	0	0
Program.....	\$10,000	\$25,000	\$35,000

Specification of Increase (Program):Improved Event Notification Capability (1 position, \$25,000)

The Center for Short-Lived Phenomena acts as a clearing house for the receipt and dissemination of information on rare natural events which might otherwise go unobserved or uninvestigated. Last year the Center participated in 146 geophysical, astrophysical, and biological events compared with 68 events in the previous year. Over 250,000 event notifications were sent to 2,252 correspondents in 122 countries. Forty-six federal agencies and departments are users of the Center's services. The Center has been successful in obtaining outside assistance for special projects, such as the Apollo flights, and it has started a subscription system for those individuals and organizations who are receivers, but not major contributors, of information. However, the success of the Center's regular operations depends heavily upon the core of federal support it receives. The volume of work has put a strain upon the limited resources of the Center. In order to meet this growing workload, the Center requires a publication specialist (\$7,000) and funds for communications (\$8,000), printing (\$6,000), and supplies and other services (\$4,000).

CENTER FOR SHORT-LIVED PHENOMENA

1969 Actual.....	0
1970 Estimate.....	\$10,000
1971 Estimate.....	\$35,000

The Center for Short-Lived Phenomena was established in fiscal year 1968 to serve as a clearing house for the timely receipt and dissemination of information concerning rare natural events which might otherwise go unobserved or uninvestigated. Rapid dissemination of event reports permits research teams to enter an area, often while the event is occurring, to gather information that otherwise would be lost to science. Reports are received from a wide range of sources, including news media, private citizens, individual scientists, and scientific observatories. These reports are made available to investigators and others who become correspondents of the Center and indicate their desire to receive them. Reports are transmitted by radio, cable, telephone, or air mail, depending on the correspondent's ability to receive the information and/or respond to the event.

An increase of \$25,000 is requested to provide for a publications specialist and sufficient communications services to report the increasing number of events to a worldwide network of scientists and researchers.

Need for Increase--During 1969, the Center participated in 146 geophysical, astrophysical, and biological events as compared to 68 events in 1968, including 23 major earthquakes and other earth science events such as landslides, landslides, storm surges, and tsunamis; 51 ecological events including 11 animal eruptions, migrations, and colonizations; 17 major oil spills and pollution events; 21 astrophysical events including 16 major fireballs, 5 meteorite falls and their recovery; 7 urgent anthropological/archeological events including two new tribe discoveries. Other events of interest included a floating island in the Caribbean, a submarine volcanic eruption in the Solomon Islands, the Indo-Pacific starfish plague, and 44 events of transient lunar phenomena observed during the Apollo manned lunar missions. A partial list of the events reported by the Center for Short-Lived Phenomena during the first 10 months of calendar year 1969 is shown on the following page.

These events led to 54 actual onsite investigations. Twenty scientific publications have resulted from the Center's operations. The Center's work has received an enthusiastic response from the scientific community throughout the world. It has been besieged with requests from universities, foundations, Federal agencies, and scientific societies asking to become part of the Center's reporting system. Its number of correspondents has grown to 2,252 in 122 countries, representing every major scientific discipline. New requests continue to arrive at the rate of 50 a month. Forty-six Federal agencies and departments are users of the Center's services.

The Center has instituted every possible efficiency including automatic computer printouts of event notifications. However, the resources of the Center are severely limited and its current ability to cope with more than 250,000 event notifications is very inadequate. The Center has been successful in obtaining outside financial support for special projects, e.g. the Apollo flights, and has also started a subscription system for those individuals and organizations who are receivers, but not major contributors of information. While some \$15,000 will be raised by this means, the success of the Center's regular operations depends heavily on the level of the core Federal funding it receives. The most essential need is for a publications specialist to handle the increased event traffic and for operations and communications services to assure that sufficient facilities will be available to maintain the required speed and level of event reporting (\$25,000).

SMITHSONIAN INSTITUTION
 CENTER FOR SHORT-LIVED PHENOMENA

INDEX TO EVENTS

EVENT NUMBER	NAME	LOCATION	DATE OF EVENT
1-69	SOLOMON ISLANDS EARTHQUAKE	SOLOMON ISLANDS	5 JANUARY 1969
2-69	SANTA FE PREHISTORIC CAMEL TRACKS	NEW MEXICO, USA	6 JANUARY 1969
3-69	OITA-TOKYO FIREBALL	JAPAN	7 JANUARY 1969
4-69	MT. MERAPI VOLCANIC ERUPTION	INDONESIA	8 JANUARY 1969
5-69	ATHIENS FIREBALL	GREECE	16 JANUARY 1969
6-69	WAMA STONE AXE TRIBE DISCOVERY	SURINAM, S.A.	8 JUNE 1968
7-69	CEDAR RAPIDS FIREBALL	IOWA, USA	26 JANUARY 1969
8-69	MINDANAO EARTHQUAKE	PHILIPPINES	30 JANUARY 1969
9-69	SANTA BARBARA OIL SPILL	CALIFORNIA, USA	30 JANUARY 1969
10-69	ST. MARYS' DUCK KILL	MARYLAND, USA	23 JANUARY 1969
11-69	PUEBLITO DE ALLENDE METEORITE SHOWER	MEXICO	8 FEBRUARY 1969
12-69	GUNNING IJA VOLCANIC ERUPTION	INDONESIA	27 JANUARY 1969
13-69	TELICA VOLCANIC ACTIVITY	NICARAGUA	11 FEBRUARY 1969
14-69	HOUSTON FIREBALL	TEXAS, USA	6 FEBRUARY 1969
15-69	ANCHORAGE MOOSE MIGRATION	ALASKA, USA	MID-FEBRUARY 1969
16-69	KILAUEA VOLCANIC ERUPTION (1969)	HAWAII, USA	22 FEBRUARY 1969
17-69	DECEPTION ISLAND VOLCANIC ERUPTION (1969)	ANTARCTICA	21 FEBRUARY 1969
18-69	MAKASSAR STRAIT EARTHQUAKE	INDONESIA	23 FEBRUARY 1969
19-69	MT. LAU LOBO VOLCANIC ERUPTION	INDONESIA	27 FEBRUARY 1969
20-69	PORTUGUESE EARTHQUAKE	PORTUGAL	28 FEBRUARY 1969
21-69	MALAWI FIREBALL	MALAWI, AFRICA	21 JANUARY 1969
22-69	PERUVIAN ANT IRRUPTION	PERU, S.A.	1 MARCH 1969
23-69	TECOLUTIA SEA ANIMAL DISCOVERY	MEXICO	6 MARCH 1969
24-69	COOK INLET OIL SPILL	ALASKA, USA	4 MARCH 1969
25-69	LOUISIANA OIL SPILL	LOUISIANA, USA	16 MARCH 1969
26-69	MINAMI-DAKE, SAKURA-ZIMO VOLCANO	JAPAN	6 MARCH 1969
27-69	CHICAGO RIVER OIL SPILL	ILLINOIS, USA	21 MARCH 1969
28-69	ICELAND POLAR BEAR KILL	ICELAND	22 JANUARY 1969
29-69	DIGICAS VOLCANO	PHILIPPINES	27 MARCH 1969
30-69	TURKEY EARTHQUAKE	TURKEY	28 MARCH 1969
31-69	HALMAHERA ISLAND EARTHQUAKE	INDONESIA	27 MARCH 1969
32-69	RED SEA EARTHQUAKE	RED SEA AREA	31 MARCH 1969
33-69	ETHIOPIAN RIFT EARTHQUAKE	ETHIOPIA, AFRICA	29 MARCH 1969
34-69	GREENVILLE FIREBALL	S. CAROLINA, USA	31 MARCH 1969
35-69	NORSALV LANDSLIDE	SWEDEN	12 APRIL 1969
36-69	URKUT LANDSLIDE	HUNGARY	14 MARCH 1969
37-69	NAPA FIREBALL	CALIFORNIA, USA	15 APRIL 1969
38-69	NLW JERSEY FISH/CRUSTACEAN MORTALITY	NLW JERSEY, USA	SEPT/OCT 1968
39-69	DUTCH COAST OIL SPILL	NETHERLANDS	20 FEBRUARY 1969
40-69	BELFAST METEORITE FALL	IRELAND	25 APRIL 1969
41-69	RINCON DE LA VIEJA VOLCANIC ACTIVITY	COSTA RICA, C.A.	22 APRIL 1969
42-69	HOUSTON FIREBALL NO. 2	TEXAS, USA	3 MAY 1969
43-69	FARALLON DE PAJAROS SUBMARINE VOLCANIC ERUPTION	MARIANNA ISLANDS	11 MARCH 1969
44-69	POAS VOLCANIC ACTIVITY	COSTA RICA, C.A.	3 MAY 1969
45-69	GREAT BARRIER REEF STARFISH PLAGUE	AUSTRALIA	1968-1969
46-69	SAMAR SPONTANEOUS SOIL BURN	PHILIPPINES	20 APRIL 1969
47-69	SANDY HOOK FISH KILL	NEW JERSEY, USA	11 MAY 1969
48-69	AMCHITKA EARTHQUAKE	ALASKA, USA	14 MAY 1969
49-69	HAMILTON TRADER OIL SPILL	ENGLAND	30 APRIL 1969
50-69	ARISTARCHUS RED SPOT	MOON	1 APRIL 1969
51-69	LAKE MICHIGAN SALMON HIGH DDT RESIDUE DISCOVERY	MICHIGAN, USA	MARCH 1969
52-69	ARISTARCHUS BRIGHTENINGS	MOON	21 MAY 1969
53-69	MT. HAINIER SEISMIC ACTIVITY	ALASKA, USA	1968-1969
54-69	PISCATAQUIS RIVER OIL SPILL	NEW HAMPSHIRE, USA	22 MAY 1969
55-69	SALO LANDSLIDE	FINLAND	19 MAY 1969
56-69	SHANTUNG TIDAL WAVE	PEOPLE'S REP./CHINA	23 APRIL 1969
57-69	JUNIN LAGOON MARINE POLLUTION	PERU, S.A.	12 MAY 1969
58-69	MEKONG VALLEY FLOODING	SOUTH EAST ASIA	1971-1986
59-69	IOWA FIREBALL	MIDWEST USA	5 JUNE 1969
60-69	WEYMOUTH OIL SPILL	MASSACHUSETTS, USA	7 JUNE 1969
61-69	MISSOURI MASTODON FOSSIL FIND	MISSOURI, USA	4 JUNE 1969
62-69	UBINAS VOLCANIC ACTIVITY	PERU, S.A.	1 JUNE 1969
63-69	BECEJ NATURAL GAS ERUPTION	YUGOSLAVIA	4 JUNE 1969
64-69	MEDITERRANEAN SEA EARTHQUAKE	MEDITERRANEAN SEA	12 JUNE 1969
65-69	RALEIGH BAY BIRD KILL	N. CAROLINA, USA	13 JUNE 1969
66-69	ARARAQUARA FIREBALL	BRAZIL	11 JUNE 1969
67-69	SOUTH CHINA FLOODING	CHINA	MAY 1969
68-69	ALMA OIL SPILL	WISCONSIN, USA	16 JUNE 1969

SMITHSONIAN INSTITUTION
 CENTER FOR SHORT-LIVED PHENOMENA

INDEX TO EVENTS

EVENT NUMBER	NAME	LOCATION	DATE OF EVENT
69-69	RHINE RIVER FISH KILL	GERMANY-NETHERLANDS	21 JUNE 1969
70-69	RUAPEHU VOLCANIC ERUPTION	NEW ZEALAND	22 JUNE 1969
71-69	VICTORIAN TREMORS	AUSTRALIA	20 JUNE 1969
72-69	INDIANA FIREBALL	MIDWESTERN USA	26 JUNE 1969
73-69	CASTROVIRREYNA SINKING	PERU	25 JUNE 1969
74-69	COOK INLET OIL SPILL II.	ALASKA, USA	23 JUNE 1969
75-69	UTHAI THANI SITE DISCOVERY	THAILAND	14 JUNE 1969
76-69	CHILI RIVER CONTAMINATION	PERU	14 JUNE 1969
77-69	SACSAYHUMAN MINIATURE SCULPTURE FIND	PERU	14 JUNE 1969
78-69	TOLEDO CATTLE KILL	SPAIN	1968-1969
79-69	MAGHAR LANDSLIDE	ISRAEL	JAN./FEB. 1969
80-69	TUNIS FIREBALL	TUNISIA	6 JULY 1969
81-69	NEWPORT CLAM IRUPTION	RHODE ISLAND, USA	JUNE 1969
82-69	TOLFA TREMORS	ITALY	2 JULY 1969
83-69	LEINE RIVER POLLUTION	GERMANY	3 JULY 1969
84-69	CHIRMACHAS ADVANCE	PERU	1968-1969
85-69	SOOTY TERN HATCH FAILURE	FLORIDA, USA	MAY/JUNE 1969
86-69	WINDWARD PASSAGE FLOATING ISLAND	CUBA	4 JULY 1969
87-69	MASSACHUSETTS BIRD KILL	MASSACHUSETTS, USA	29 JUNE 1969
88-69	AMAZON RIVER PORPOISE DISAPPEARANCE	PERU	1968-1969
89-69	CORUSQUIRA LANDSLIDE	AZORES	25 JUNE 1969
90-69	JAPANESE BAMBOO KILL	JAPAN	1969
91-69	UNITED KINGDOM BIRD KILL	ENGLAND	6-9 JULY 1969
92-69	YELLOW SEA EARTHQUAKE	CHINA	18 JULY 1969
93-69	CHARLES RIVER FISH KILL	MASSACHUSETTS, USA	18-20 JULY 1969
94-69	TRANQUILITY BASE MOONQUAKE	MOON	24 JULY 1969
95-69	PERUVIAN TREMORS	PERU	24 JULY 1969
96-69	COLOMBIAN TRIBE DISCOVERY	COLOMBIA	MARCH 1969
97-69	SOUTHERN LAKE MICHIGAN ALEWIFE MORTALITY	MICHIGAN, USA	JULY/AUGUST
98-69	MOLUCCA PASSAGE EARTHQUAKE	INDONESIA	5 AUGUST 1969
99-69	OHIO-INDIANA FIREBALL	OHIO-INDIANA, USA	5 AUGUST 1969
100-69	NORTHEASTERN U.S. GYPSY MOTH INFESTATION	NORTHEAST U.S.	JULY/AUGUST 1969
101-69	KURIL ISLANDS EARTHQUAKE	KURIL ISLANDS, USSR	11 AUGUST 1969
102-69	LAS CRUCES FIREBALL	NEW MEXICO, USA	9 AUGUST 1969
103-69	SOUTH AFRICA: OILING OF PENGUINS	REP. OF S. AFRICA	10 AUGUST 1969
104-69	NORTH ISLAND (N.Z.) FIREBALL	NEW ZEALAND	3 JUNE 1969
105-69	WATERFOWL KILL/ROTULISM	UNITED STATES	AUGUST 1969
106-69	GUYANA ARCHAEOLOGICAL FIND	GUYANA	1969
107-69	TATARANYA MUD FLOW	HUNGARY	15 AUGUST 1969
108-69	GIRONDE GIL SPILL	ST. BRIEUC, FRANCE	19 AUGUST 1969
109-69	EASTERN U.S. HIGH AIR POLLUTION POTENTIAL	EASTERN U.S.	AUGUST 1969
110-69	GALAPAGOS ISLANDS TREMORS	GALAPAGOS ISLANDS	30 AUGUST 1969
111-69	HUEINETINANGO LANDSLIDE	GUATEMALA	28 AUGUST 1969
112-69	PANAMA MOTH MIGRATION	PANAMA	13 AUGUST 1969
113-69	EUROPEAN BIRD MIGRATION SCARCITY	EUROPE	1969
114-69	MEIJE ROCKFALL	FRANCE	2 SEPTEMBER 1969
115-69	AMCHITKA PASS EARTHQUAKE	ALEUTIAN ISLANDS	12 SEPTEMBER 1969
116-69	ALEUTIAN ISLANDS VOLCANIC ERUPTION	LITTLE KISKA, AK.	12 SEPTEMBER 1969
117-69	DAVAO "LAND-RISE"	PHILIPPINES	MAY 1969
118-69	WEST FALMOUTH OIL SPILL	MASSACHUSETTS, USA	16 SEPTEMBER 1969
119-69	TRINIDAD BUTTERFLY INVASION	TRINIDAD	SEPTEMBER 1969
120-69	POLICE METEORITE FALL	CZECHOSLOVAKIA	16 SEPTEMBER 1969
121-69	MIAMA SNAIL INFESTATION	FLORIDA, USA	SEPTEMBER 1969
122-69	CAPE PROVINCE EARTHQUAKE	SOUTH AFRICA	29 SEPTEMBER 1969
123-69	SANTA ROSA EARTHQUAKE	CALIFORNIA, USA	2 OCTOBER 1969
124-69	PRINCE GEORGE METEORITE FALL	CANADA	21 AUGUST 1969
125-69	MURCHISON METEORITE FALL	AUSTRALIA	28 SEPTEMBER 1969
126-69	OZARKS FIREBALL	KANSAS, USA	9 OCTOBER 1969
127-69	GREAT BRITAIN BIRD MORTALITY	GREAT BRITAIN	OCTOBER 1969
128-69	HUANCAYO EARTHQUAKE	PERU	1 OCTOBER 1969
129-69	ST. LOUIS SPIDER INVASION	MISSOURI, USA	8 OCTOBER 1969
130-69	CALIFORNIA VOLCANIC ERUPTION	PHILIPPINES	11 OCTOBER 1969
131-69	BANJA LUKA EARTHQUAKE	YUGOSLAVIA	26 OCTOBER 1969
132-69	CALIFORNIA CHANNEL IS. EARTHQUAKES	CALIFORNIA, USA	22 OCTOBER 1969
133-69	MT. TAAL VOLCANIC ERUPTION	PHILIPPINES	29 OCTOBER 1969
134-69	KOVACHI SUBMARINE VOL. ERUPTION	SOLOMON ISLANDS	30 OCTOBER 1969
135-69	BEZMIANNY VOLCANIC ERUPTION	U.S.S.R.	3 NOVEMBER 1969
136-69	WESTPORT SNAKE MORTALITY	CANADA	13 OCTOBER 1969

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

AMERICAN REVOLUTION BICENTENNIAL

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	0	5	5
11 Personnel Compensation.....\$	0	\$ 74,000	\$ 74,000
12 Personnel Benefits.....	0	6,000	6,000
21 Travel & Transp. of Persons ..	0	20,000	20,000
22 Transportation of Things	0	20,000	20,000
23 Rent, Comm. and Utilities.....	0	1,000	1,000
24 Printing and Reproduction	0	10,000	10,000
25 Other Services	0	110,000	110,000
26 Supplies and Materials	0	90,000	90,000
31 Equipment	0	65,000	65,000
41 Grants	0	4,000	4,000
TOTAL.....\$	<u>0</u>	<u>\$ 400,000</u>	<u>\$ 400,000</u>

Analysis of Total

Pay Increases	0	0	0
Program.....	0	\$400,000	\$400,000

Specification of Increase (Program):Bicentennial Planning, Research, and Exhibitions (5 positions, \$400,000)

The Bicentennial presents an extraordinary opportunity to review national accomplishments and goals and renew public hope and confidence in the future. The Smithsonian can play an important role in this observance drawing upon its scholarly staff, collections documenting the history and growth of the United States, effective working relationships with museums across the country, and strong attraction for the visiting general public. A number of events and exhibits relating to the period of the Revolution have been held. With the additional \$400,000 requested, the Smithsonian proposes to develop a comprehensive array of exhibitions, both for Washington and for circulation to other communities, publications, seminars, and advisory and technical services to assist other museums and state and local history organizations in their activities.

AMERICAN REVOLUTION BICENTENNIAL PROGRAM

1969 Actual	0
1970 Estimate	0
1971 Estimate	\$400,000

The 200th anniversary of the United States will be an occasion for Americans to reassess the ideals which brought about the Revolution, to review our national achievements, to place in perspective ethnic, cultural, and religious diversities which have consistently contributed to our national development, to see where we have fallen short of maintaining the spirit of 1776, and to build a stronger base for hope and confidence in our future. The Bicentennial presents a unique opportunity for strong reaffirmation of the self-reliance, courage, and pursuit of worthy goals and high ideals which characterized the leaders of the Revolution.

With its scholarly staff, a large and broadly-based public participation in its activities, and as the national repository of objects documenting the history and growth of the United States, the Smithsonian Institution will play an important role in the observance of the Bicentennial of the American Revolution. In anticipation of increasing public interest, the Smithsonian Institution has initiated scholarly research and across-the-board planning to provide historical accuracy and latest technology to its projected exhibitions and other programs relating to the events leading up to the Revolution. This ground work will enhance the educational quality of our programs in later years. Some preliminary exhibitions and events have already been held, beginning in fiscal year 1965. A listing of these appears in Table 1. These preliminary activities have been funded by the Smithsonian's regular appropriations. Since the level of commemorative activity must increase as 1976 approaches, additional funds will become necessary.

Table 1

Smithsonian Projects Relating to the Bicentennial
through fiscal year 1970

- Exhibition on George Mason and the Virginia Bill of Rights;
- Exhibition on individual rights as dramatized by the 200th Anniversary of the Stamp Act;
- Exhibition on the Townshend Acts;
- Small exhibit of Charles Willson Peale silhouettes, an aspect of American graphic arts history;
- Annual Folk Festivals on the Mall;
- Performances of Americana in the Mall tent;
- Exhibition on the history of American music making in colonial Boston, Mount Vernon, the Moravian colony, and folk music of the time;
- Research opportunities at the graduate level in American studies, in American military and naval history, and in civil history;
- Study programs at the National Portrait Gallery, National Collection of Fine Arts, Freer Gallery, and the Center for the Study of Man, which has extensive resources for the study of the American Indian;

Exhibition on printing and print making in the first 150 years of American life;

Research studies in museum administration, conservation, and exhibits;

Study programs at the Cooper-Hewitt Museum in New York.

These various Smithsonian activities have focused on the growing tensions between the New World settlers and the Mother Country; the development of a distinctive American culture; and the development of a technology responsive to our material requirements.

The responsibility of the Smithsonian in the 200th anniversary observances, the expectations of the President, the proper demands of the Congress and concerned private organizations and persons, will all be disappointed if the contribution of the Smithsonian must be limited to that possible within regular budgetary ceilings.

Intensified preparations must begin in fiscal year 1971 if the Smithsonian is to perform according to the letter and spirit of Congressional and public requests. The special budget request for the Smithsonian's participation in the Bicentennial of the American Revolution for 1971 is \$400,000.

This initial funding, with gradual increases as activity is stepped-up, will be needed through fiscal year 1977, as indicated in Table 2. This special funding will not result in significant permanent increases in the Institution's staff or appropriations base. Collections, exhibitions, research, and publications, however, will continue to be a tangible result of this investment long after the close of the Bicentennial Era.

Table 2

Bicentennial Activities and Budget Forecast
(in thousands of dollars)

	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Exhibitions and Performances	\$250	\$405	\$500	\$500	\$600	\$650	\$400
Research and Publications	50	100	125	125	125	125	100
Planning and Administration	100	100	100	100	100	75	50
Total	<u>\$400</u>	<u>\$605</u>	<u>\$725</u>	<u>\$725</u>	<u>\$825</u>	<u>\$850</u>	<u>\$550</u>
Staff	5	8	12	14	16	18	18

1. Washington Programs \$280,000

Current data indicate that every other visitor to Washington is also a visitor to the Smithsonian's museums and art galleries. Total attendance at the Smithsonian in calendar year 1969 was over 12.4 million. It is safe to assume that the number of visitors will continue to grow, and probably at an increasing annual rate, in the years leading up to 1976.

To provide these visitors with an accurate and dramatic review of the first 200 years of our national life, the Smithsonian is planning a number of new exhibitions. While every effort will be made to open many of these new exhibitions early in the Bicentennial period, scholarship and accuracy will not be sacrificed in the interest of haste, since these exhibits must serve to educate as well as inspire.

Through the application of audio-visual and design technology, we propose to project the visitor back in time to the second half of the 18th century. Using building space as a "time corridor," instead of the traditional exhibition hall, the visitor will be surrounded by objects, sights, sounds, smells, and other aspects of the period so that he can participate in the home, work, and leisure of the colonists on the eve of the Revolution. In subsequent years, this new technique may be applied to later periods in American history.

An innovative visitor participation exhibition on the price of independence is also planned. Using interactive devices, the visitor will test his skill in any of several roles--that of a Boston merchant, a Southern planter, etc.--against the known risks of sea trade, civil war between colonies, reluctance to engage in war, fear of defeat and reparations, possible loss of markets in Great Britain, freedom of manufacture, and removal of Mother Country controls over westward expansion.

An exhibition on the three-quarters of the United States not included in the Treaty of Paris of 1783 will relate the historical background, culture, ideas, and people and their daily life in the last part of the 18th Century is also in the planning stage. This exhibition will show that the 13 Colonies of the Revolutionary War shared experiences with what was destined to become a major part of the United States.

Smaller exhibitions will cast light on everyday life in America in the mid-1770's. For example, one is tentatively entitled "Three Meals a Day," showing the American menu in the various colonies, sources of foods, techniques of preparation, and tools used in the production and cooking of meals. Another exhibit will treat the physical and political structure of towns and cities in the colonial era, using artifacts, publications, and graphics to explain the wide variety of institutions created to serve the needs of the people. A third will deal with clearing land, building houses and public buildings, tools, architectural types, and borrowed techniques and modifications applied in the New World. We also plan an exhibition on the evolution of American educational systems in the 17th and 18th centuries.

The Smithsonian will continue to develop the design concept for the Revolutionary War segment of the proposed National Armed Forces Museum Park. Here, on the outskirts of Washington, adjacent to major travel routes between the North and South at Fort Foote, we are planning a facility where visitors will see reconstructions of Revolutionary War stockades, cantonments, and equipment. The displays under consideration will show how the citizen-soldier of 1776 lived while on active duty along the frontier and in garrison towns.

2. National Programs \$120,000

Wherever practicable, these special exhibitions mentioned above will be designed to conform to the needs of our Traveling Exhibition Service. Currently the Smithsonian is circulating some 200 exhibitions among museums, universities, and public institutions throughout the United States. By making these special Bicentennial programs available in every state, we will support the decision of the American Bicentennial Commission that the observances should be national in scope. We expect to expand this service to include performances as well as exhibitions of artifacts.

Under authority of the National Museum Act, we are already counseling museums around the country on how best they can display their collections during the Bicentennial Era. We expect to receive an increasing number of this kind of request as we approach 1976. In addition, many of the requests now being received are seeking help in training museum personnel in restoration, conservation, and display of objects in anticipation of major exhibitions in the next few years. We should provide all the assistance we can, within the limits of authority established in the National Museum Act.

Several national organizations have requested our help in specific areas. For example, the American Association for State and Local History has asked us to help in preparing a handbook on Bicentennial display and events which will be distributed to the Association's 3,000 members in every state, and to others on request. We also anticipate additional requests for advice and technical assistance from the various State Bicentennial Commissions.

3. International Programs 0

While no funds are being requested in fiscal year 1971 for Bicentennial activities at the international level, some work has already begun in this area. For example, the Smithsonian is considering sponsoring and coordinating study programs, research activities, and symposia involving leading scholars from those countries which made the larger contributions to the American War for Independence--Great Britain, France, Poland, Spain, and Germany. It is anticipated that the Smithsonian will be able to borrow significant Revolutionary War period artifacts from private and public collections in these countries for display in the United States during the Bicentennial Era. The Smithsonian also expects to be asked for its advice by museums abroad which will be preparing their own exhibitions showing the history of relations between the United States and the respective host countries.

The preceding paragraphs summarize the concept of the Smithsonian's Bicentennial program, aimed at reaching the broadest possible audience at all levels of interest. To recast the two budget estimates given, \$280,000 for Washington programs and \$120,000 for national programs, into the three inter-related areas of activity, the following expenditure program is proposed for fiscal year 1971:

Exhibitions and performances	\$250,000
Research and publication	50,000
Planning and administration	100,000

Exhibitions and Performances..... \$250,000

Essential to Smithsonian participation in the Bicentennial is the display of artifacts from the collections, as well as the display of contemporary and period plays, musical works, and folk arts. Exhibitions and performances must be carefully planned to take full advantage of resources and research available. Exhibitions must be fabricated in such a way as to provide high visitor interest and education. They must be designed to conform to available space, both within the Smithsonian premises and for use as traveling exhibitions. To permit the fullest participation in the educational benefits resulting from the proper display of significant historical collections, \$250,000 are needed. These funds will provide the raw materials and workmanship needed to design, produce, install, and circulate exhibitions and performances.

Research and Publication \$50,000

Research is a basic function of the Smithsonian. As indicated above, we have already begun a comprehensive research program into the origins and impact of the American Revolution on American life and national development. Original source material is rapidly disappearing with the passage of time. If the research is to serve fully the needs of the Bicentennial, it must be completed well before 1976 to be reflected in exhibitions, in American scholarship, and in the curricula of our educational systems. An important aspect of this research will be the holding of symposia of leading experts in various aspects of American society, resulting in a distillation of national purpose. To make the most of this research, findings must be published. Some can be published by the Smithsonian; some will best be published commercially. The Smithsonian's collections and scholarship can be used to excellent advantage in the preparation of documentary films for use in classroom showing, on educational and commercial television, and in theatrical distribution. For these purposes a request of \$50,000 is made for fiscal year 1971. The Institution intends to draw on the talents of outside organizations, such as universities and colleges. Special fellowships or limited term appointments will be used wherever possible. In this way any extended increase in staff will be held to a minimum.

Planning and Administration \$100,000

Fiscal year 1971 will be the first year of major Smithsonian-wide involvement in Bicentennial planning. Much of the necessary planning, administration, and coordination of activity will take place in the Office of the Director General of Museums, but other elements of the Smithsonian--notably the National Museum of History and Technology--will need support in developing projects. In addition, increased costs will begin to be incurred by certain of the administrative and central support activities for library reference work, printing, and similar research and exhibition support services.

Funding by Category of Expense

Personnel.....	\$80,000
Special assistant for Bicentennial planning	
Program assistant	Exhibits specialist
Clerk-typists (2)	
Travel.....	20,000
Advisory services	Training
Research	Consultation
Transportation.....	20,000
Borrowing and lending objects	
Traveling exhibitions and performances	
Rent, Communications and Utilities.....	1,000
Office and exhibit equipment	
Printing.....	10,000
Guides	Handbooks
Research publications	
Services.....	110,000
Exhibitions design and preparation	
Training of museum personnel	Consulting
Supplies and Materials.....	90,000
Exhibitions preparation	
Equipment.....	65,000
Cases for permanent and circulating exhibitions	
Insurance.....	4,000
Borrowed objects	

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

ENVIRONMENTAL SCIENCES PROGRAM

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>0</u>	<u>14</u>	<u>14</u>
11 Personnel Compensation.....\$	0	\$ 186,000	\$ 186,000
12 Personnel Benefits.....	0	14,000	14,000
21 Travel & Transp. of Persons ..	0	35,000	35,000
22 Transportation of Things	0	5,000	5,000
23 Rent, Comm. and Utilities.....	0	0	0
24 Printing and Reproduction	0	25,000	25,000
25 Other Services	0	210,000	210,000
26 Supplies and Materials	0	45,000	45,000
31 Equipment	<u>0</u>	<u>80,000</u>	<u>80,000</u>
TOTAL.....\$	<u>0</u>	<u>\$ 600,000</u>	<u>\$ 600,000</u>

Analysis of Total

Pay Increases.....	0	0	0
Program.....	0	\$600,000	\$600,000

Specification of Increase (Program):Environmental Assessment, Monitoring, and Education (14 positions, \$600,000)

The Smithsonian sees its participation in improving the quality of man's environment as three-fold: identification and assessment of the components of man's natural surroundings and of his cultural development; monitoring of change for predictive purposes; and education at all levels of public interest. In order to make a significant contribution in these areas, the Institution requests an appropriation of \$600,000. The Institution would use these funds for five inter-related kinds of activity reinforcing and integrating our own resources of staff, collections, and natural land areas with carefully selected additional investigators and outside advisers. These activities are:

- identifying plants and animals as bioindicators and benchmarks. Funds for field studies and publications are requested (\$100,000).
- monitoring rates and processes of change. Four additional scientists for special projects with funds for research support are requested (\$150,000).
- undertaking research on social biology. Funds for an anthropologist, a historian, for fellowship offerings, and a series of seminars are requested (\$75,000).
- communicating environmental knowledge to the public. Funds for a program planner, for continuing the preparations of the exhibition hall on environmental life, and for a seminar series are requested (\$125,000).
- developing a national referral center. Funds for four data-handling technicians and three computer specialists and computer services are requested to speed up the preparation of collection data, and applying electronic data processing to its retrieval and analysis (\$150,000).

ENVIRONMENTAL SCIENCES PROGRAM

1969 Actual.....	\$	0
1970 Estimate.....	\$	0
1971 Estimate.....	\$	600,000

For many years the activities of the Smithsonian Institution have been grouped together for purposes of budget submissions to the President and to the Congress under the headings of buildings: the Museum of Natural History, the National Collection of Fine Arts, the Air and Space Museum, and so forth.

These artificial and cramping categories tend to distort the essential meaning of the Institution. From this misleading listing comes an assumption in the public mind that the Institution has long since given up its mandate "for the increase and diffusion of knowledge among men", and has taken refuge in doing a purely administrative job of keeping public buildings open during prescribed hours of the day.

In the past year, the national mood of uneasiness has become focused on the threatened decline in the quality of the environment to danger levels which may negate the advances of our technology and make a mockery of our culture. Human memory is short. This is the "now" generation, and it is all as if warnings had never been signalled before. The subject is merely becoming urgent at the moment, and therefore all levels of our society are listening at last to what had been the voices in the wilderness, whether they speak of pesticides or of venal manufacturers.

In fact the Smithsonian has always been a single institution for research and publication, and for teaching through exhibits and public education. In the 1870s, the Institution pioneered in investigations of coal smoke (then the smog over cities). Its studies of commercial fisheries in this country paved the way for the massive federal support of everything from fisheries to oceanography. The Smithsonian's measurements of solar radiation in the middle of Washington began in 1907 from the tower of the "castle" on the Mall, presumably with the thought that this was a good clear place in which to operate, have, fortunately, continued down to the present, the longest continuous series of such measurements anywhere. As the data which is being assembled with the aid of computers has now shown, there has been a net decrease of solar radiation in Washington of 16 percent in that period. The unique point is that a widespread decrease of total incident light could have catastrophic consequences for agricultural crop development and maturation ultimately disturbing the life patterns of birds and insects and seed-carrying functions and pollination.

The Smithsonian's collections after years of being considered as collections in a museum, an "attic" bypassed by modern science, are now being projected into the forefront of the environmental crisis. Now, through data processing, science is beginning to realize the inherent value of natural history collections. The rates of change of animal populations along our coasts and in our streams, correlated with changing composition of plant species, provide a time scale and a predictable future. These rates of change are extremely complex and intricate but they can be measured and thus set against a probability curve. From its vast store of data, the Smithsonian is continually being asked by government agencies such as the Agency for International Development, the Corps of Engineers, the Bureau of Commercial Fisheries, and the Federal Water Pollution Control Agency to provide such information. Our collections are thus providing a reliable set of guidelines for tolerable rates of future deterioration, one of the few such in existence. Much more could be done, however, in making these collections fully accessible and useful.

Six years ago, the Atomic Energy Commission was queried about the after-effects of a possible Sea Level Canal across the Isthmus of Panama. The Smithsonian offered to perform an ecological assessment of this proposed momentous manipulation of the environment but was turned down because the climate of understanding of such issues, as recently as six years ago, was not conducive to the Smithsonian being heard. By January 1970, an onsite survey by a committee of the National Academy of Sciences agreed unanimously that continuing ecological monitoring and experimental studies are of critical importance in the whole question of the future of such a canal. In addition, committee members have urged the Smithsonian to continue the present follow-up studies of the oil spill in December 1968 of the tanker "Witwater" off the reefs at Balboa on the Atlantic side of the Canal Zone. These are the first such studies ever made in tropical waters, and one of the very few studies designed to follow the long-term progression of ecological changes resulting from oil pollution.

Since 1964 the Smithsonian has been assembling with private funds a tract of land on the western shore of the Chesapeake Bay, less than an hour from Washington. The Institution will thereby control one small watershed in the two thousand acres of this Chesapeake Bay Center for Environmental Sciences. Members of the Congress from Maryland such as Mr. Morton and Senators Tydings and Mathias, as well as the Chairman of the Anne Arundel County Council and the Mayor of Annapolis, have all acclaimed this move, not only because it presents an opportunity, the only one of its kind near Washington, to set up a demonstration ecological center for research in watershed and estuary control and monitoring, but also because it carries great appeal to the Maryland State Government in its current concern to develop all possible methods of cooperative action in tideland and estuarine studies, vital to the future of our fisheries, recreation, and life quality. This is also consistent with the President's concept of the new Federalism.

In the international sphere, the Smithsonian is active in basic ecological studies, especially in the tropics. Smithsonian staff are assessing environmental change from the Mediterranean to Southeast Asia, and in parts of the Pacific, the Caribbean, and Latin America. Our scientists have been called upon to study the new reef-destructive outbreak of the Crown of Thorns Starfish, and legislation has been introduced into the 91st Congress to support the Institution's research in this outbreak, jointly with that of the Department of the Interior.

For the past four years the Institution has been concerned with implementing the design of an education exhibit hall, to fill an existing space under redesign in the National Museum of Natural History, which will graphically detail the biological world which surrounds us, and relate the steady deterioration of our environment. This hall will contain a variety of visitor interaction devices to provide positive educational feed-back to an estimated four million visitors a year. Tests of such interactive devices in other museums show a 50 percent ratio of retention of the message contained in an exhibit hall designed for educational purposes. The development of this hall can be a significant contribution to environmental education. The recent concern of the Congress with the introduction of a number of bills calling for environmental education indicates a direct reflection of citizen concern. Environmental education is a subtle, complex problem. It strikes perhaps at the roots of what is wrong with education in the United States today. To a consumer-oriented, endless frontier-oriented culture, such as ours, it may be a generation before the present monolithic problems of American education can be assessed sufficiently to redirect our cultural course towards conservation and the limitation of the endless growth of the Gross National Product.

Other aspects of education concern the Smithsonian, whose contacts now span students at the graduate level from more than forty universities, all using Institutional facilities and working with our staff. Within the mix of our instructional activities at the graduate and postdoctoral level there is the opportunity, possessed at present by no single university, to create an inter-disciplinary approach toward studies in the environment. As countless recent authors have lamented, there seems to be no room in most current programs on the environment for humanists and social scientists. This omission is serious since the solution to environmental degradation is not to be discovered exclusively in science but must come through an interaction between the sciences and the humanities. Many root causes of the degradation are to be found in social, political, and cultural traditions of our country, such as our ideas on standards of living. In the Smithsonian, unlike a university, departmental lines are not strictly drawn. As a result, current study groups such as our Center for the Study of Man can include primate specialists, anthropologists, social scientists, historians, and ecologists. Internal and external committees derived from this Center are currently considering how to plan for a potential Museum of Man, an educational exhibit demonstration in human ecology--man as part of the environment as opposed to the role of an observer.

If we have described at length some of the current and past activities of the Smithsonian, it is to show that the Institution has not come lately into the field of environmental studies. We have been ahead of the times by collecting the data on the basic elements of the environment that we knew or well suspected would constitute a vast resource for study and education. The Institution is thus an ecological powerhouse, producing basic research information relevant to the environment, as few other institutions can claim to be doing. As Philip Abelson, editor of *Science*, has said, "the goal of opinion-making should be constructive action. A prerequisite for this is thorough planning based on an adequate fund of knowledge. Scientists can make imaginative contributions to planning, and they can help ensure that the factual bases for decisions are as sound as possible." It is institutions such as the Carnegie Institution of Washington, Rockefeller University, the Marine Biological Laboratory at Woods Hole, and the Smithsonian which typify the special communities of environmental scientists which the National Academy of Sciences' Environmental Studies Board recommended should be set up to study the hazardous state of the nation's environment today.

The Smithsonian, then, sees its participation in improving the quality of man's environment as three-fold: identification and assessment of the components of man's natural surroundings and of his cultural development; monitoring of change for predictive purposes; and education at all levels of public interest. In order to make a significant contribution in these areas, the Institution requests an appropriation of \$600,000. These funds would be used as follows, drawing upon the Smithsonian's own resources of professional staff, laboratories, and natural areas, but with a major effort to integrate and apply these resources by drawing upon the talents of outside investigators and advisers.

1. Identifying plants and animals as bioindicators and benchmarks

Plants and animals serve as excellent continuous sentinals that warn of impending danger in the same way as the "mine canary" was used to detect deadly gases in coal mines. Many plants and animals are sensitive to various dangerous pollutants produced by man and can be used to warn of critical impending changes, which may be irreversible. The very existence of certain organisms also may serve as benchmarks to measure the impact of civilization on the environment.

Studies at Smithsonian facilities would increase our knowledge of these management tools. The National Museum of Natural History and the Smithsonian Tropical Research Institute would be heavily involved in this effort. Funds in the amount of \$100,000 are requested for field studies and publications that would identify and isolate those components of the environment of special significance as bioindicators.

2. Monitoring rates and processes of change

Selected natural communities would be studied to determine their productivity, variation, and the effect of man's pollution. Quantitative studies of comparable ecosystems would provide data for intelligent land use. The detailed studies of preserved natural areas are essential to measure the rates of change and thus to predict future changes. The Chesapeake Bay Center and the Smithsonian Tropical Research Institute would be central to this effort. In addition, our Radiation Biology Laboratory, in conjunction with the Center for Short-Lived Phenomena and the Smithsonian Astrophysical Observatory with its worldwide network of tracking stations provides us with some of the tools for environmental monitoring techniques and training in them, as well as providing strategically located centers for monitoring studies. Enhancement of current activity with key additional researchers would fill gaps in existing competence and draw together ongoing studies. Four additional scientists, with funds for equipment and research support, are requested (\$150,000).

3. Undertaking research in social biology

The Smithsonian would step-up development of its nascent program of studies of man evolving and man today. Building on our own competence, knowledge, and collections data in the National Museum of History and Technology, the Center for the Study of Man, Anacostia Neighborhood Museum, and other units, the Institution would bring together additional humanities scholars and social biologists in fellowship offerings and a series of seminars. Funds in the amount of \$75,000 are requested for a cultural anthropologist, a social historian, and for fellowship and seminar expenses.

4. Communicating environmental knowledge to a wider public

The Institution proposes to continue to produce its educational exhibit hall on the environment and to develop a seminar series for a continuing discussion and debate with ecologists, educators, and planners representing the interests of government and private decision makers. The Smithsonian has already conducted three such international seminars, the first on Science, Culture and Society (1965), the second The Fitness of Man's Environment (1967), and the third on Man and Beast (1969), a study of recent advances in the science of social behavior. All of these seminars have been or are being published. They can be enlarged easily to provide the forum for discussion which members of the Congress, as well as other groups, continually recommend. Funds in the amount of \$125,000 are requested for a program planner, contract exhibits expenses, travel, and costs of program participants.

5. Developing a National Referral Center for environmental data

The Smithsonian would develop its electronic data processing program for monitoring, retrieving, and correlating ecological and environmental data. This would be patterned on and complementary to the gradual development of our Oceanographic Sorting Center. Staff would be assigned to speed up collection data input and processing of terrestrial and aquatic biological populations from which baseline data on predictive environmental models can be constructed. This activity is fundamental to all environmental assessment and should be recognized

as a special high priority program, supportive of many of the corrective projects of federal and state agencies. Funds in the amount of \$150,000 for four data-handling technicians and three computer specialists and computer services are requested.

This proposed activity would enable the Smithsonian to respond in a way that is supportive of the concerns of the President, the Congress, and the nation as an extension of our underlying goal for many years, the story of man's relation to his environment. As stated in the Smithsonian's current Annual Report, "For the present phenomenon is that our culture and our environment are no more at war with each other on terms of rough equality, but that rather our material culture is in danger of destroying our old presumed enemy, nature." Thus we should live up to our original mandate for education and diffusion of knowledge.

Funding by Category of Expense

Personnel		\$200,000
Program planner	Biologists (4)	
Cultural anthropologist	Social historian	
Data technicians (4)	Computer specialists (3)	
Travel		35,000
Field research	Seminar participants	
Transportation		5,000
Field expeditions		
Printing		25,000
Research reports	Seminar proceedings	
Services		210,000
Exhibit preparation	Computer processing	
Seminars and fellowships		
Supplies and Materials		45,000
Field research and laboratory projects		
Equipment		<u>80,000</u>
Exhibit cases	Laboratory needs	
	Total	\$600,000

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

ACADEMIC PROGRAMS

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>18</u>	<u>2</u>	<u>20</u>
11 Personnel Compensation.....	\$ 182,000	\$ 19,000	\$ 201,000
12 Personnel Benefits.....	14,000	1,000	15,000
21 Travel & Transp. of Persons ..	10,000	0	10,000
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	1,000	0	1,000
24 Printing and Reproduction	0	0	0
25 Other Services	322,000	60,000	382,000
26 Supplies and Materials	3,000	0	3,000
31 Equipment	3,000	0	3,000
TOTAL.....	\$ 535,000	\$ 80,000	\$ 615,000
<u>Analysis of Total</u>			
Pay Increases	\$13,000	\$5,000	\$18,000
Program.....	\$522,000	\$75,000	\$597,000

Specification of Increase (Program):Higher Education and Research Training (\$60,000)

No better way to guarantee the quality of research has ever been found than to maintain an environment conducive to setting and attaining the highest intellectual goals. This is a major purpose of the Smithsonian higher education program which brings predoctoral candidates and junior postdoctoral investigators into close and productive research relationships with senior established Smithsonian scientists and historians. Some 25 universities are now represented by fellowship recipients working at the Institution. The professional research staff of 350 is willing to supervise over 150 students and investigators each year but only about 25 percent of this number can be accepted. Many outstanding applicants must be turned down. The Smithsonian is requesting an additional \$60,000 to increase the number of fellowships it can award each year from 40 to 44.

Elementary and Secondary Education (2 positions, \$15,000)

The Smithsonian's guided tours for school children are highly popular. Some 3,000 tours, serving 100,000 children, will be conducted this year by a volunteer docent staff. Two positions are required to improve the Institution's capacity to serve in museum areas it is not now offering: an instructor in the field of technology to develop scripts and tours in the National Museum of History and Technology, and an audio-visual services technician to provide films and sound tapes to school groups to supplement their tour activity.

ACADEMIC PROGRAMS

1969 Actual	\$544,000
1970 Estimate.....	\$535,000
1971 Estimate.....	\$615,000

A major Smithsonian objective is to make its learning resources available to the formal educational community and to the general public. At the higher education level, the Institution, through the Office of Academic Programs, develops and coordinates fellowship programs through a variety of cooperative agreements with the nation's universities. The Office promotes research opportunities and advanced study training for doctoral candidates and postdoctoral investigators. Seminars in various curatorial and disciplinary areas are conducted which are central to the interests of the students and the Smithsonian's research efforts. Formal educational activities below the university level are also a responsibility of the Office. These include the popular escorted tours for schools, the preparation of teaching guides, lectures, and audio-visual materials. Public use of the educational facilities of the Institution is growing rapidly at all levels of training. The Smithsonian is considered a significant supplementary educational resource by colleges and universities and by elementary and secondary school systems.

An increase of \$75,000 is requested including \$60,000 for higher education and research training in nine disciplines, and \$15,000 for the expansion of escorted tours for school children. Also requested are \$5,000 for necessary pay purposes.

Need for Increase1. Higher education (\$60,000)

The Smithsonian seeks to increase from 40 to 44 the number of stipends it is able to offer visiting investigators from the nation's colleges and universities to receive specialized training in research within its facilities. The disciplines to be served and the number of associated Smithsonian professional staff in each are as follows: American history, 26; anthropology, 18; environmental biology, 23; evolutionary and behavioral biology (tropical zones), 7; evolutionary and systematic biology, 65; history of art and music, 23; history of science and technology, 30; museum studies, 25; physical sciences, 47. The interaction of the Smithsonian graduate program with museum research, and how this interaction benefits the students, the Institution, and the nation, is demonstrated on the following page.

2. Elementary and secondary education (2 positions, \$15,000)

The Institution also requests one position for an instructor in elementary education in the field of technology, to arrange for school tours of exhibits in the National Museum of History and Technology dealing with actual demonstrations of crafts and skills such as weaving or ginning, and with themes of great importance from our history, such as industrial research, the path of invention, and the history of science. One such staff member could develop about four tour patterns which could then be opened to approximately four school groups daily. No school tours can now be offered in these areas for lack of a staff member to research and prepare scripts.

A second position is required for an audio-visual services technician to set up films and sound tapes to be presented to school children to enrich and supplement their present tour activities. Such elements may be regarded as experiments for the eventual improvement of exhibits, to be tried out in the halls on actual audiences of school children. No such services are available at present, while the total number of tours has increased to an estimated annual total (for 1969-1970) of 3,000, serving almost 100,000 school children, with an unpaid volunteer "docent", or escort, staff of 140.

Academic Programs
Examples of Research Conducted Through the Graduate Fellowship Program

No better way to guarantee the quality of research has ever been found than to maintain an environment conducive to setting and attaining the highest intellectual goals. Junior investigators serving their apprenticeship in research jostle comfortable assumptions and insist on the unexpected, while giving freely of their enthusiasm and alert insights. In return, the senior established professional staff member helps to guide the development of research skills and offers counsel on the interpretation of published literature and observations that may be in doubt. Student and supervisor are like two knives that keep each other sharp.

One example of benefits to students, the nation, and the Institution, derived from the existence of this environment, is the work being generated by a doctoral candidate from the University of Kansas assigned to the Smithsonian's Department of Paleobiology. While at his home university, this student developed a strong interest in the systematic study of upper paleozoic invertebrate fossils. Because his interests were closely aligned to the research objectives of the Smithsonian's professional staff, because of the extensive collections here at the Institution, and because formal academic arrangements existed with his university, he was selected to receive a Smithsonian fellowship. At the present time, the student is working under the direct supervision of the curator of the Division of Invertebrate Paleontology, widely known as one of the experts on the usage of fossil remains for subsurface exploration.

Their collaborative effort is expected to yield an understanding of previously unknown relationships of specific ancient fossil colonies with today's living counterparts. Information on the size, shape, development, and distribution of fossil colonies will clarify further the existing knowledge of biostratigraphy--the discipline most directly related to the successful exploration of petroleum resources. Further, the publications resulting from this student's activity at the Institution will add to the scarce stockpile of current base-line information concerning the balance of a particular segment of the past and present ecological systems.

Another example would be a Smithsonian fellowship holder that is pursuing the study of the significance of American small boat building. He is a doctoral candidate from the University of Indiana. His dissertation, to be submitted to the University in late 1970, will deal with the cultural and technological necessity of the appearance of the small boat building tradition in the upper east coast of this country. The development and absorption by the hardy New Englanders of the precise measurements and complex knowledge required by this art is a reflection of man's capacities when faced with a need to gain a livelihood from the sea. The student's interests parallel the expertise of professional staff members in the Museum of History and Technology. In addition to the direct educational benefits accruing to the doctoral candidate, the Institution will gain because the information will be used in exhibits planned for the summer of 1970.

The Institution should take the initiative in extending the fellowship program. The Smithsonian professional research staff of 350 is willing to supervise over 150 students and investigators per year. Our actual ability to award stipends is far below this figure. This program is potentially one of the most beneficial to the nation in the entire array of Institutional investments.

A partial listing of the home universities of fellowship recipients in fiscal year 1970 include: the universities of Brown, California, Columbia, Duke, Florida State, George Washington, Harvard, Indiana, Johns Hopkins, Kansas, New Hampshire, New York, North Carolina, Pennsylvania, Pittsburgh, Rhode Island, Southern California, Stanford, Tulane, Washington, Wisconsin, and Yale.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

OFFICE OF THE TREASURER

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>31</u>	<u>2</u>	<u>33</u>
11 Personnel Compensation.....	\$ 339,000	\$ 14,000	\$ 353,000
12 Personnel Benefits.....	26,000	17,000	43,000
21 Travel & Transp. of Persons ..	1,000	0	1,000
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	150,000	24,000	174,000
24 Printing and Reproduction	0	0	0
25 Other Services	20,000	5,000	25,000
26 Supplies and Materials	3,000	5,000	8,000
31 Equipment	<u>3,000</u>	<u>0</u>	<u>3,000</u>
TOTAL.....	<u>\$ 542,000</u>	<u>\$ 65,000</u>	<u>\$ 607,000</u>
<u>Analysis of Total</u>			
Pay Increases	\$29,000	\$5,000	\$34,000
Program.....	\$513,000	\$60,000	\$573,000

Specification of Increase (Program):

Mail and Workmen's Compensation Costs; Improved Financial Management
(2 positions, \$60,000)

The Office of the Treasurer provides analytical and technical support, such as planning, budgeting, accounting, and auditing, in financial management matters. Staff increases required, due to the rising workload, consist of a fiscal clerk to provide a direct access to fiscal information stored in the computer, and a clerk-typist for the Office of the Treasurer and the Internal Audit Office (\$10,000). Additional funds are required for a reimbursement to the Workmen's Compensation Fund (\$16,000), increases in the postal rate (\$20,000), rental of a remote terminal device for the fiscal clerk (\$4,000), supplies (\$5,000), and other services (\$5,000).

Administrative and Central Support Activities--Office of the Treasurer

1969 Actual	\$558,000
1970 Estimate	\$542,000
1971 Estimate	\$607,000

This Office manages the income and expenditures of the Institution and provides the Secretary with recommendations related to the allocation of funds. It is composed of the Office of Programming and Budget, the Contracts Office, the Accounting Division, and the Internal Audit Office. These sections provide analytical and technical support in financial management matters. Planning, budgeting, accounting, auditing, and reporting center in the Treasurer's Office. Additional funding is required to meet a rising and more complex workload.

An increase of \$60,000 is requested to cover additional workmen's compensation and public service mail, and for accounting purposes. An additional \$5,000 are requested to cover necessary pay increases.

Need for Increase--Staff increases required consist of a clerk-typist in the Office of the Treasurer and a fiscal clerk. The Office of the Treasurer has only one secretary. This office also provides typing for the Internal Audit Office. An additional clerk-typist is requested to provide typing assistance for these offices.

The Accounting Division needs to acquire direct source data automation of accounting transactions. This would eliminate delays and costs of keypunching, and result in faster and better accounting control. The accounting transaction would be typed once and automatically punched on paper tape. The paper tape could then be put into the computer without further handling and the machine would also be used as a remote terminal device to the computer. A fiscal clerk would be needed to operate the machine, plus renting the machine, supplies and forms, and some related equipment.

As additional costs to this Office, the Department of Labor has requested \$32,000 reimbursement to the Workmen's Compensation Fund. Of this amount, \$16,000 are already in the base, and the Smithsonian is requesting \$16,000 additional. Postal rate increases and a higher volume of Smithsonian mail require a projected additional \$20,000 over the current expenses of about \$150,000.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

DIVISION OF PERFORMING ARTS

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	(7)	(2)	(9)
11 Personnel Compensation.....	\$ 92,000	\$ 14,000	\$ 106,000
12 Personnel Benefits.....	7,000	1,000	8,000
21 Travel & Transp. of Persons ..	3,000	0	3,000
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	9,000	5,000	14,000
24 Printing and Reproduction	0	0	0
25 Other Services	27,000	11,000	38,000
26 Supplies and Materials	7,000	10,000	17,000
31 Equipment	23,000	12,000	35,000
TOTAL.....	<u>\$168,000</u>	<u>\$ 53,000</u>	<u>\$ 221,000</u>

Analysis of Total

Pay Increases	\$ 8,000	\$ 3,000	\$ 11,000
Program.....	160,000	50,000	210,000

Specification of Increase (Program):Festival of American Folklife, American College Theatre Festival, and Other Programs (2 positions, \$50,000)

Program support funds in the amount of \$27,000 are requested to design and produce the American Folklife and American College Theatre festivals. The Folklife Festival was attended by 618,000 persons in July 1969, and the College Theatre Festival was very successful as a forum for the best achievements of ten of the nation's colleges and universities. In both cases, funds are required for staging, equipment rental, supplies, and related production costs. Two additional clerical assistants (\$12,000) and funds for contractual services (\$11,000) are also required to permit the Division to provide technical assistance and advice to state groups and other organizations interested in producing folk, craft, and other similar performances.

Administrative and Central Support Activities--Division of Performing Arts

1969 Actual	\$204,000
1970 Estimate	\$168,000
1971 Estimate	\$221,000

The Division of Performing Arts plans and presents the annual Festival of American Folklife; programs in contemporary arts forms; many children's activities, including a highly acclaimed puppet theatre; touring performances which schedule folklife presentations, lectures, and concerts to universities, colleges, and community centers across the nation; the American College Theatre Festival; and other public presentations related to the growth of American popular culture. Its objective is to use music, theatre, and dance to illuminate and preserve the folk traditions that comprise the cultural heritage of this country--to add collections of performances and demonstrations to the Smithsonian's collections of artifacts. Enthusiastic public attendance and participation in these events have testified to the value of adding this new dimension to traditional museum visiting.

An increase of \$50,000 is sought for 1971 in order to sustain this activity and to maintain high quality production standards. An additional \$3,000 are requested for necessary pay increases.

Need for Increase--Increased funding of \$15,000 is needed for the Festival of American Folklife. Public attendance at this living exhibition of traditional American culture has increased 25 percent per year since its inception in 1967, reaching an estimated 618,000 people in 1969. Significant outside funding for this event has been received in the past from private sources such as the Institute of Texas Cultures, the AFL-CIO, and the States of Pennsylvania and Arkansas; but these private donations cannot begin to meet all the necessary costs of production, staff, travel to search out and obtain native craftsmen, performers, and folk art objects, field research, and supplies and equipment. Private foundations have in fact, expressed the opinion that the Festival of American Folklife is no longer an experiment, but rather the most important popular presentation of American folk cultures regularly held in the United States and, as such, the Smithsonian should attempt to establish an adequate federal appropriation for its costs.

The American College Theatre Festival provides a forum for the presentation of the best achievements of the nation's colleges and universities in the arts. In the selection of the ten best productions chosen from participating institutions, this Festival offers national recognition and high incentive toward better standards of excellence and scholarship. Entrants have substantially increased over the first year of this event, and public response has substantially added to the Smithsonian's responsibility to provide an acceptable level of production support. The requested \$12,000 will provide services for the design and fabrication of staging facilities, rental of equipment, and supplies.

Basic staff support is insufficient to meet the increased demands on the Division of Performing Arts for technical assistance and advice. Requests from state groups and other organizations have risen fivefold in the past two years, totaling more than 50 specific requests in the past year. The highly specialized nature of these inquiries demand detailed attention. For example, over the past two years the Division has developed the concept and plans for the performing and cultural programs for Summer in the Parks; helped plan the United States' participation in the cultural programs of the XIX Olympiad in Mexico City; and assisted in the planning of a national program in the arts for the Girl Scouts of America. Increased staff and consultant services are needed if the Division is to meet these responsibilities. Funds are requested for a fiscal clerk and a clerk-typist (\$12,000) and for contractual services (\$11,000).

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

OFFICE OF PERSONNEL AND MANAGEMENT RESOURCES

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>16</u>	<u>3</u>	<u>19</u>
11 Personnel Compensation.....	\$ 256,000	\$ 37,000	\$ 293,000
12 Personnel Benefits.....	19,000	2,000	21,000
21 Travel & Transp. of Persons ..	8,000	1,000	9,000
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	0	0	0
24 Printing and Reproduction	0	0	0
25 Other Services	7,000	10,000	17,000
26 Supplies and Materials	2,000	0	2,000
31 Equipment	<u>1,000</u>	<u>4,000</u>	<u>5,000</u>
TOTAL.....	<u>\$ 293,000</u>	<u>\$ 54,000</u>	<u>\$ 347,000</u>

Analysis of Total

Pay Increases	\$18,000	\$4,000	\$22,000
Program.....	\$275,000	\$50,000	\$325,000

Specification of Increase (Program):Improved Personnel Management (3 positions, \$50,000)

In the past several years, Congress has significantly broadened the Smithsonian's activities and programs. The number of personnel has risen from 500 to over 2,000. New Executive Orders and Civil Service directives have increased the workload of the personnel office to over 3,500 actions a year. In addition, the Office handled 51,000 telephone calls, 2,000 letters, and 7,000 visitors. Based on a comparative study of other agencies, the Smithsonian's personnel office staff is 50 to 100 percent below that of other offices, based on the number of employees served. To meet this workload and properly serve the employees, two personnel management specialists, a clerk-typist (\$35,000), and funds for travel (\$1,000), equipment (\$4,000), and other services (\$10,000) are requested.

Administrative and Central Support Activities--
Office of Personnel and Management Resources

1969 Actual	\$259,000
1970 Estimate.....	\$293,000
1971 Estimate.....	\$347,000

The Office of Personnel and Management Resources is responsible for a wide range of program functions including special studies; organizational development; manpower planning, utilization and control; and management evaluations. Additionally, this Office serves as a central staff office for job classification, recruitment and placement, employment relations and training, and wage and salary administration. Advice and technical assistance is provided to all levels of management, the professional staff, and to all employees in a wide range of specialized job categories.

An increase of \$50,000 is requested to strengthen the personnel specialist and clerical staff in order to meet Institutional needs. An increase of \$4,000 is sought also for necessary pay purposes.

Need for Increase--In recent years the Congress has significantly the Smithsonian's activities with the enactment of over twenty major programs. Appropriations have increased to \$28,000,000 and manpower authorizations have increased from 500 to over 2,000. New museums, including the National Museum of History and Technology, the National Portrait Gallery, the National Collection of Fine Arts, and the Joseph H. Hirshhorn Museum and Sculpture Garden have been added. As a result of Congressional support, all Smithsonian bureaus, located from Massachusetts to Panama, are establishing new research, exhibit, and public service objectives and priorities. Their directors seek guidance from the Office of Personnel and Management Resources in the analysis and deployment of manpower and in better ways of achieving organizational effectiveness. These needs have placed great demands upon this Office.

Indicative of the Office's workload is the number of individual personnel actions, each requiring analysis and implementation. Over 3,000 personnel requests are submitted annually. For the six months period January through June 1969, approximately 1,800 actions were processed. In addition, the Office had over 7,000 visitors, 51,000 telephone calls, and 2,000 letters last year. This activity is expected to increase during the remainder of this fiscal year and next. The Civil Service Commission has greatly increased the number and variety of special programs in the personnel area. New Executive Orders and Commission directives require expanded programs for the disadvantaged, the socially deprived, promotions, awards, appeals, discrimination, and discipline. The additional positions requested are urgently needed to meet these needs. A comparative study of the ratio of personnel office staff in other agencies to the number of employees serviced reveals that the staffing in the Smithsonian's Office is 50 to 100 percent below that of other offices.

Two personnel management specialists and a clerk-typist and funds for travel, training, other services, and equipment are requested (\$50,000).

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

HEALTH UNITS.

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>2</u>	<u>1</u>	<u>3</u>
11 Personnel Compensation.....	\$ 31,000	\$ 7,000	\$ 38,000
12 Personnel Benefits.....	2,000	1,000	3,000
21 Travel & Transp. of Persons ..	0	0	0
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	0	0	0
24 Printing and Reproduction	0	0	0
25 Other Services	15,000	0	15,000
26 Supplies and Materials	2,000	3,000	5,000
31 Equipment	0	0	0
TOTAL.....	\$ <u>50,000</u>	\$ <u>11,000</u>	\$ <u>61,000</u>
<u>Analysis of Total</u>			
Pay Increases	\$2,000	\$1,000	\$3,000
Program.....	\$48,000	\$10,000	\$58,000

Specification of Increase (Program):Improved Health Facilities for Visitors and Staff (1 position, \$11,000)

The two small health units now in existence in the Natural History and History and Technology buildings are insufficient to meet the emergency needs of the employees and the more than 12 million visitors to the Smithsonian. This request is for a nurse (\$8,000) and supplies and materials (\$3,000) to establish a health unit in the Arts and Industries building.

Administrative and Central Support Activities--Health Units

1969 Actual	\$48,000
1970 Estimate.....	\$50,000
1971 Estimate.....	\$61,000

Smithsonian Health Units located in the museum buildings provide first-aid and medical assistance to employees and to visitors.

An increase of \$10,000 is requested to establish a Health Unit for the buildings on the south side of the Mall. An increase of \$1,000 is sought also for necessary pay purposes.

Need for Increase--The two small health units now in existence in the Natural History and History and Technology buildings are insufficient to meet the emergency needs of employees and visitors. Visitors to the air and space, art, and special exhibits on the south side of the Mall now number three million a year. There are no medical facilities in these buildings to offer first-aid and other medical assistance to either visitors or to employees. This request is for a nurse and supplies and equipment to establish a health unit in the Arts and Industries Building. Smithsonian responsibility to its visitors as well as staff requires that this facility be available as soon as possible.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

INFORMATION SYSTEMS DIVISION

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>10</u>	<u>4</u>	<u>14</u>
11 Personnel Compensation.....	\$ 130,000	\$ 55,000	\$ 185,000
12 Personnel Benefits.....	7,000	4,000	11,000
21 Travel & Transp. of Persons ..	3,000	2,000	5,000
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	12,000	12,000	24,000
24 Printing and Reproduction	0	0	0
25 Other Services	2,000	27,000	29,000
26 Supplies and Materials	2,000	0	2,000
31 Equipment	7,000	4,000	11,000
TOTAL.....	<u>\$ 163,000</u>	<u>\$ 104,000</u>	<u>\$ 267,000</u>

Analysis of Total

Pay Increases	\$8,000	\$4,000	\$12,000
Program.....	\$155,000	\$100,000	\$255,000

Specification of Increase (Program):Improving Access to Collections Information (4 positions, \$100,000)

The Institution, because of its stewardship of the National Collections and related reference documents, possesses an unmatched assembly of materials tracing man's physical, cultural, and technological development, and his natural surroundings. Information in these collections can have a direct bearing on the solution to present day cultural and biological problems. This information is not readily accessible because of its volume, different methods of filing, and wide variety of subject matter. Five years ago, the Smithsonian began to explore automation methods to make collections and research data more accessible and thereby more useful. Some progress has been made; for instance, a pilot project in the National Museum of Natural History. The Institution has the computer capacity to handle more data, but needs additional systems analysts and programmers to develop, test, and install specific systems. The request is for four such employees (\$55,000) and support funds for travel, equipment rental, computer time, and related services (\$45,000).

Administrative and Central Support Activities--Information Systems Division

1969 Actual.....	\$171,000
1970 Estimate.....	\$163,000
1971 Estimate.....	\$267,000

The Information Systems Division designs and applies computer technology to the Institution's data processing needs. Included in the Division's activities are the development of systems for indexing and retrieving data, especially that associated with objects and specimens in the collections; providing mathematical and statistical analysis techniques to aid Smithsonian researchers in interpreting and presenting data; and installing systems for library, accounting, personnel, property control, and other management purposes.

An increase of \$100,000 is requested to modernize museum and laboratory information handling techniques in order to improve significantly the quality of research, access to data pertaining to the collections, and reference services to the public. An additional \$4,000 are requested for necessary pay increases.

Need for Increase--The Institution, because of its stewardship of the National Collections and associated reference documents, possesses an unmatched assembly of materials tracing man's physical, cultural, and technological development and his natural surroundings. These collections in art, history, and science now number well over 60 million objects. The Smithsonian continues to acquire and protect new objects at the rate of one million a year. Not only are these collections the basic resource for the Institution's exhibit program, but each year thousands of schoolchildren, collectors, scientists, and historians ask questions pertaining to individual and groups of objects. Traditional indexing and recordkeeping systems cannot handle those questions which often cut across subject matter, time, and geographical lines.

The information contained in the collections can have direct bearing on the solution to cultural and biological problems. For instance, one project presently being conducted by outside investigators involves the study of 20,000 human skulls in the National Collections to determine if any correlation exists between dental disease and environment. The time it would take to complete this project, and others like it, would be greatly reduced if information was already stored in a data bank and available for retrieval and analysis.

Five years ago, the Institution first began to explore automation methods for collection information in order to make it more accessible. Some progress has been made. The feasibility and usefulness of automation has been demonstrated by the joint efforts of the National Museum of Natural History and the Information Systems Division in pilot studies (primarily on birds, crustacea, rocks, and minerals) of an information storage and retrieval system. These studies must be implemented and the system gradually extended throughout the natural history collections. In another museum, the National Portrait Gallery and the Division are developing a computer program based on the Gallery's Catalog of American Portraits to permit the retrieval of a great variety of research data about portraits of distinguished Americans, their subjects, and the artists. Already the Catalog lists more than 30,000 portraits.

The Division has the computer capacity for handling more data, but it has reached the limit of its capacity to analyze and design systems before actual computer processing is possible. Much of the effort of the present staff of six systems analysts and programmers must go to maintain and update computer programs that have been developed.

The greatest need of the Information Systems Division is for programmer/analysts to develop, test, and install new systems. Funding for four programmer/analysts (\$55,000) and for travel, equipment rental, computer time, and other services (\$45,000) is requested.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

SMITHSONIAN INSTITUTION LIBRARIES

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>44</u>	<u>8</u>	<u>52</u>
11 Personnel Compensation.....	\$492,000	\$66,000	\$558,000
12 Personnel Benefits.....	37,000	5,000	42,000
21 Travel & Transp. of Persons ..	5,000	2,000	7,000
22 Transportation of Things	1,000	0	1,000
23 Rent, Comm. and Utilities.....	4,000	9,000	13,000
24 Printing and Reproduction	23,000	15,000	38,000
25 Other Services	11,000	15,000	26,000
26 Supplies and Materials	49,000	29,000	78,000
31 Equipment	<u>7,000</u>	<u>23,000</u>	<u>30,000</u>
TOTAL.....	<u>\$629,000</u>	<u>\$164,000</u>	<u>\$793,000</u>
<u>Analysis of Total</u>			
Pay Increases	\$34,000	\$14,000	\$48,000
Program.....	\$595,000	\$150,000	\$745,000

Specification of Increase (Program):Correction of Serious Shortages (8 positions, \$150,000)

Although the Smithsonian will continue to use the resources of other libraries through interlibrary loans and other ways, the availability of adequate in-house library materials and reference services is essential to the effective performance of the Institution's curation, exhibition, and research functions. Presently, the Smithsonian Libraries are not meeting staff needs. The request for fiscal year 1971 is meant to correct partially several deficiencies. An increase in purchase funds of \$52,000 is needed to permit purchasing only an average of three books and four journals a year for each professional employee. Only about \$50,000 are now available. An additional \$15,000 are needed for binding to preserve valuable books. (\$15,000 are now available, but \$50,000 a year are needed). A manager for the very important exchange program and three cataloger-index technicians are required (\$39,000). Two additional technicians (\$10,000) are required to cope with a steadily rising volume of reference questions--some 70,000 questions were posed to the library by staff and outsiders in 1969. An additional \$15,000 are needed to pay for computer services to streamline the Libraries' operations. And lastly, a librarian and a technician (\$19,000) are required to take care of a growing collection of rare and valuable books, many acquired by gift.

Administrative and Central Support Activities--
Smithsonian Institution Libraries

1969 Actual	\$586,000
1970 Estimate.....	\$629,000
1971 Estimate.....	\$793,000

The Smithsonian Institution Libraries are essential to the effective performance of the Institution's programs in research, exhibitions, and the curating of the National Collections. The Libraries' resources of some 750,000 volumes and periodicals in the fields of art, science, and history have come to be widely used also by the educational and research activities of Government agencies, schools, museums, and the general research community.

An increase of \$150,000 is requested to raise the level of book and journal purchases, to improve reference services, and to manage rare book collections. In addition, \$14,000 are sought to help meet necessary pay increases.

Need for Increase--The Libraries' program is devoted to only basic traditional functions. It offers retrieval and delivery services for book and journal materials, standard bibliographical cataloging, and reference and information services in all subjects. These activities are operating with about one-half the necessary financial and staff resources for basic services required by the Smithsonian's museums, galleries, and laboratories. The budget request for fiscal year 1971 provides for only partial attainment of an adequate basic library program. No new or advanced programs or facilities are sought. The Libraries have taken every opportunity to improve the quality of its operations. Emphasis has been given to streamlining portions of the collections and the curtailment of low-priority services.

Basic needs fall into the following complementary areas of library operations.

1. Acquisition and maintenance of books and journals (4 positions, \$106,000)

This request includes \$15,000 for the purchase of journals (860 titles), \$37,000 for the purchase of monographs, technical reports, and documents (3,700 titles), and \$15,000 for binding, filming, and other processing.

The Libraries should be acquiring about \$175,000 worth of purchased documentary material a year to cover art, history, and science subjects. This estimate is based on known staff needs. In fiscal year 1969, only \$47,000 were available for this purpose for a deficit of \$128,000. By 1971, the \$175,000 will be inflated by rising costs to \$190,000. The requested budget for documentary material in 1971 is \$99,000. With these requested funds, total buying power will be about 3,700 monographs (three titles per Smithsonian professional, technical, and administrative staff member) and 4,700 journals (four titles per such staff member).

The total annual requirement for binding and preservation is approximately \$50,000 for 10,000 volumes. In fiscal years 1969 and 1970, \$15,000 were available to do about 3,000 books each year. With the requested additional \$15,000, 6,000 books can be bound and preserved in fiscal year 1971. This will leave some 18,000 volumes unprocessed for the three year period, or a cumulative backlog of \$90,000 work.

The request for new positions includes a manager for the important gift and exchange program, which brings essential library materials to the Smithsonian at little cost, and three cataloger--indexer technicians. It is

estimated that each technician can assist with the cataloging and indexing of \$10,000 of new documentary materials a year. The remaining material will be made available for limited use through gross inventory methods.

2. Reference and document delivery services (2 positions, \$10,000)

The Libraries had 15 positions in fiscal year 1969 for information, reference, interlibrary borrowing and lending, photocopying, paging and messenger, and related services. This is one library staff member for each 78 Smithsonian staff members involved in research, exhibition, education, and administrative work. Two additional technicians would raise the Libraries' service staff to 17 positions, or one for every 69 Smithsonian staff members. This increase would also permit the Libraries to improve services to Government agencies and to non-Smithsonian scholars, students, and the general public. Some 70,000 reference questions were handled in fiscal year 1969.

3. Process management and improvement (\$15,000)

An additional \$15,000 are requested for computer services for purchasing, cataloging, and other library management functions. The Libraries estimate that \$9,000 of computer time in fiscal year 1969 did the work of three library technicians that would cost \$16,000. Further innovations in automation and process improvement should reduce the rate of growth of the Libraries' staff to accommodate increased budgets for library materials.

4. Special collection management (2 positions, \$19,000)

A librarian and a technician are required to service rare and valuable books. The Smithsonian, because of the nature of its research and collections, has been required to acquire a number of publications issued in limited editions. These have greatly increased in monetary value over the years because of their rarity. Few libraries other than the Smithsonian now have these materials so they have become important as a national resource and more valuable as a marketable commodity. Many of these books are now interfiled on the open shelves in the general collections and need identification, preservation, and protection. The Institution also attracts gifts of books, many of which are rare. In 1969, the Smithsonian Institution received the Dwight-Tucker Ornithological Collection, valued at nearly \$100,000, containing materials which should not be housed on open shelves in the generally accessible areas of the libraries.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

PHOTOGRAPHIC SERVICES DIVISION

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	18	2	20
11 Personnel Compensation.....	\$ 189,000	\$ 12,000	\$ 201,000
12 Personnel Benefits.....	16,000	1,000	17,000
21 Travel & Transp. of Persons ..	0	0	0
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	0	0	0
24 Printing and Reproduction	10,000	5,000	15,000
25 Other Services	1,000	2,000	3,000
26 Supplies and Materials	19,000	5,000	24,000
31 Equipment	2,000	3,000	5,000
TOTAL	\$ 237,000	\$ 28,000	\$ 265,000

Analysis of Total

Pay Increases	\$17,000	\$3,000	\$20,000
Program.....	\$220,000	\$25,000	\$245,000

Specification of Increase (Program):Laboratory Technicians and Funds for Commercial Services and Equipment Replacement (2 positions, \$25,000)

The work of the photographic laboratories is an integral part of the Smithsonian's publication and exhibit programs and of its ability to respond to public requests for photographs. The Division has not had a significant program increase in several years despite rising costs of goods and services and has not had a staff increase in five years despite a growing workload. Two laboratory technicians (\$10,000) are requested to relieve the photographers of routine duties amounting to about 17 hours a day. Funds in the amount of \$5,000 are needed to purchase specialized commercial services which the laboratories are not equipped to perform. Supplies, repairs, and the purchase of equipment to replace 10-year old processing and printing items require an additional \$10,000.

Administrative and Central Support Activities--Photographic Services Division

1969 Actual	\$218,000
1970 Estimate	\$237,000
1971 Estimate	\$265,000

The Photographic Services Division supplies photographic services required to meet research, documentation, conservation of collections, exhibition, and publication needs, and to help in answering public inquiries. This work involves still and motion picture photography, developing and printing, obtaining specialized commercial photographic services, and providing technical assistance and training in field photography to staff members.

An increase of \$25,000 is requested to add essential laboratory technicians, to augment the funds available for commercial services, and to repair and replace obsolete equipment. Funds in the amount of \$3,000 are also requested for necessary pay.

Need for Increase-- The growth of Smithsonian curatorial, exhibits, and research activities has increased the requirements and requests for quality photographs and slides. In fiscal year 1969, the Photographic Services Division produced 21,000 negatives, 14,000 color slides, 50,000 microframes, and 111,000 prints. The Division contributed to the completion of 73 new exhibit units in eight main exhibition halls and 42 special temporary exhibitions. Of special note was the photographing of a major portion of the recently acquired Lilly Collection of some 6,000 gold coins.

Despite these accomplishments many important photographic requests could not be met. The staff has not grown in five years despite an increasing workload. Several reassignments have been made within the Division resulting in greater productivity and a reduced service timetable.

Two lab technicians are needed to relieve the twelve photographers in the three laboratories (serving the National Museum of History and Technology, the National Museum of National History, the National Air and Space Museum, and other units) who spend a total of approximately 17 hours each day on low level duties including microfilming; print washing, drying, straightening, sorting and reconciling with orders; negative filing; and transporting and setting up equipment. Relieving these highly skilled employees of these simple, but time-consuming tasks, would enable them to reduce the backlog of several hundred orders. There are no technicians in the Division.

The photographic laboratories are not equipped to perform color and motion picture film processing, nor the preparation of mural-size prints, xerographic prints, duplicate transparencies, etc. Requests for commercial services of this type in support of the exhibits and other programs are increasing and prices are rising. Several thousand dollars' worth of work requests could not be met in fiscal year 1969 because of the lack of funds.

Many of the pieces of darkroom processing and printing equipment, purchased at the time of the Division's establishment in 1959, have deteriorated to the point where repairs no longer produce satisfactory operations. New equipment should allow five to seven years of trouble-free service. One enlarger, one printer, and one print straightener are required.

Funds are requested for two laboratory technicians and for commercial photographic services, repairs, supplies, and the replacement of wornout equipment (\$25,000).

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

SMITHSONIAN INSTITUTION PRESS

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>21</u>	<u>2</u>	<u>23</u>
11 Personnel Compensation.....	\$ 271,000	\$ 18,000	\$289,000
12 Personnel Benefits.....	20,000	1,000	21,000
21 Travel & Transp. of Persons ..	3,000	0	3,000
22 Transportation of Things	0	0	0
23 Rent, Comm. and Utilities.....	1,000	0	1,000
24 Printing and Reproduction	353,000	63,000	416,000
25 Other Services	5,000	0	5,000
26 Supplies and Materials	3,000	0	3,000
31 Equipment	2,000	0	2,000
TOTAL.....	<u>\$ 658,000</u>	<u>\$ 82,000</u>	<u>\$ 740,000</u>
<u>Analysis of Total</u>			
Pay Increases	\$23,000	\$7,000	\$30,000
Program.....	\$635,000	\$75,000	\$710,000

Specification of Increase (Program):Preparation of Exhibition and Collection Catalogs and Research Reports
(2 positions, \$75,000)

The Smithsonian prepares, prints, and distributes three basic kinds of publications which are used by the general public, students, and specialists around the world. These publications are collection catalogs, exhibition catalogs, and research studies in the fields of art, history, and science. Additional museums and galleries, new collections such as Hirshhorn, the Lilly coins, and space artifacts, and improved research productivity have dramatically increased the number of important manuscripts and created printing backlogs. Deliberate efforts by the Press to cut costs by revised procedures and use of new printing techniques have helped stretch printing funds but higher printing costs and a rising volume of work require an increase of \$63,000 in printing funds. A secretary and an indexer (\$12,000) are also needed to assist the editorial and design staff.

Administrative and Central Support Activities--Smithsonian Institution Press

1969 Actual	\$577,000
1970 Estimate	\$658,000
1971 Estimate	\$740,000

The Smithsonian Institution Press publishes the results of the Institution's research, education, and exhibits programs. It issues numerous research studies in the fields of anthropology, anthropology, biology, history, and technology. It produces catalogs that document special and permanent exhibitions and popular information booklets that describe and illustrate the National Collections. Press functions include the approval and editing of manuscripts, design of publications, procurement of printing, and distribution of 100 works annually. Over 300,000 copies of publications were distributed in fiscal year 1969.

An increase of \$75,000 is requested to meet a growing workload of exhibition and collection catalogs and research reports. Funds will be used for additional technical and clerical employees and for printing costs. An amount of \$7,000 is requested also for necessary pay purposes.

Need for Increase--Catalogs of exhibits extend the informational and educational content of exhibits beyond the walls of the museum long after the exhibits are closed. Catalogs of collections are a basic reference for persons all over the world who are unable to examine the collections directly. The Smithsonian recently has opened the National Collection of Fine Arts and the National Portrait Gallery. The Renwick Gallery will add an additional exhibit catalog workload. A number of major collection catalogs are pending in the National Museum of History and Technology. These are national museums, devoted to the display and commemoration of American history and culture, and their catalogs should rank with the quality of those issued by other leading museums. Funds for these catalogs are unavailable from other publications programs, because resources are insufficient already to publish research reports.

Support of Smithsonian research is wasted when that research remains unreported. This is especially true of scientific results which are typically basic data used for the advancement of applied research in Government agencies, industry, and universities. An expanded staff of scientists and historians and greater research productivity has caused large backlogs of unpublished research in the recent past. Smithsonian authors have been forced to attempt to publish outside of the Smithsonian. Sources of outside publishing are difficult to find for descriptive museum publications.

A continuing rise in the volume of manuscripts ready for submission is expected in fiscal year 1971 as well as further inflation in printing costs. The Press has increased its efficiency through revised procedures and has reduced the per-page cost of printing by using improved technologies. Revised formats and standardization of style in five series (Smithsonian Contributions to Earth Sciences, Zoology, Paleobiology, Botany, and History and Technology) produced economies and a substantial gain in effectiveness. Economies obtained through such means have leveled off and the printing workload can be met only by increasing Press funds. An additional \$63,000 in printing funds is requested.

For fiscal year 1971, two additional employees are needed in the Press: a secretary to assist five professionals in the production and design sections, and an indexer to assist authors and editors in the task of preparing indices to books and monographs. Funding in the amount of \$12,000 is requested for these employees.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1971

BUILDINGS MANAGEMENT DEPARTMENT

<u>Object Class</u>	<u>1970 Base</u>	<u>Increase Requested</u>	<u>1971 Estimate</u>
Number of Permanent Positions	<u>857</u>	<u>20</u>	<u>877</u>
11 Personnel Compensation.....	\$ 5,578,000	\$ 233,000	\$ 5,811,000
12 Personnel Benefits.....	434,000	18,000	452,000
21 Travel & Transp. of Persons ..	2,000	0	2,000
22 Transportation of Things	1,000	0	1,000
23 Rent, Comm. and Utilities.....	1,355,000	163,000	1,518,000
24 Printing and Reproduction	2,000	0	2,000
25 Other Services	675,000	23,000	698,000
26 Supplies and Materials	275,000	10,000	285,000
31 Equipment	100,000	6,000	106,000
TOTAL	<u>\$ 8,422,000</u>	<u>\$ 453,000</u>	<u>\$ 8,875,000</u>

Analysis of Total

Pay Increases	\$324,000	\$126,000	\$450,000
Program.....	\$8,098,000	\$327,000	\$8,425,000

Specification of Increase (Program):Maintain, Operate, and Protect New Building Spaces (20positions, \$327,000)

The request for Buildings Management Department is a very selective one aiming at meeting known needs of additional buildings spaces and related service costs. An increase of 20 positions and \$180,000 are requested to provide an adequate staffing level for the Renwick Gallery of Art scheduled for a public opening in mid-fiscal year 1971. Included in this dollar amount are funds for utilities, communications, security and fire detection systems, and custodial and maintenance supplies and equipment required in this building. The balance of the request, \$147,000 is to meet the higher costs of utilities, communications, and the repair and maintenance of mechanical equipment for some three million square feet of space in eight major buildings and nine other facilities serving some 13 million visitors a year. Costs of these services have increased some 50 per cent over the last five years, from \$1,000,000 to about \$1,500,000 based on higher unit costs and more consumption. Included in the request are: \$65,000 for electricity based in part on the airconditioning needs of the renovated Smithsonian Building; \$20,000 for communications as estimated by the GSA for the Federal Telecommunications System; \$43,000 for steam; and \$19,000 for contract maintenance of a wide range of security and fire detection systems and some 50 elevators and escalators.

BUILDINGS MANAGEMENT DEPARTMENT

1969 Actual	\$7, 451, 000
1970 Estimate	\$8, 422, 000
1971 Estimate	\$8, 875, 000

The Buildings Management Department protects, maintains, and operates eight major buildings, including the original Smithsonian Institution building, the National Museum of Natural History, the National Museum of History and Technology, the Arts and Industries building, the Freer Gallery of Art, the National Air and Space building, the Fine Arts and Portrait Galleries building, and the Renwick Gallery of Art. It is also responsible for serving nine other research, collection, and service facilities, including the Oceanographic Sorting Center and the Silver Hill Facility which provides for the restoration, preservation, and storage of air and space objects and houses reference collections of objects of science, technology, art, and natural history.

A program increase of 20 positions and \$327, 000 are required in fiscal year 1971 to provide basic services to the Renwick Gallery of Art; to meet increased costs of utility, communications, fire, security, and detection systems; and to repair and maintain elevators and escalators. An additional \$126, 000 are requested for necessary pay increases.

Need for Increase--The increases requested are required for the operation, maintenance, and protection of 3, 300, 000 square feet of exhibition and public areas, special laboratories, reference collection areas, libraries, offices, and supporting facilities located at 17 different sites in the Washington area.

The operations of the Buildings Management Department are carefully geared to meet the extraordinary uses which the buildings serve. The Smithsonian museums and galleries accommodate as many as 13 million visitors, researchers, and students annually; serve both as national depositories and as exhibition facilities for objects of great historical, scientific, and artistic value; and provide the necessary laboratories, workrooms, curatorial, administrative, and support spaces for the programs and activities of the Institution. The services of this Department are required during regular work and visiting hours, and for special events, public service, and educational programs during evenings, weekends, and holidays.

This Department must supplement its staff and program support funds to meet the increasing demand for services. The increases requested are related to the acquisition by the Smithsonian of authorized additional renovated building spaces and exhibition halls during fiscal years 1969 and 1970; to added costs of utilities and communications; to the escalation of materials and labor costs in the repair and maintenance of the elevators and escalators; and to the installation and maintenance of security and fire detection systems.

The Renwick Gallery of Art, located at 17th Street and Pennsylvania Avenue, was turned over to the Smithsonian by the contractor in February 1969, although essential restoration and renovation work remained to be done in fiscal years 1970 and 1971. The Buildings Management Department is required to give initial basic services to safeguard the building and its contents, including guard protection, custodial and laboring services, and mechanical maintenance to the heating, air conditioning, and humidity control systems in the building, on a 24-hour basis, seven days a week. This Gallery will be undergoing museum development work beginning late in fiscal year 1970, and is scheduled for opening to the public in fiscal year 1971. A small staff of five guards, one laborer, and one operating engineer is now deployed from other Institution buildings in order to provide initial support services before development work begins. The additional positions required to provide an adequate staffing level during fiscal year 1971 are

12 guards, five operating engineers, and three mechanics (electrician, painter, and carpenter). Funds are also requested for related expenses such as utilities, communications, the installation of some security and fire detection systems, custodial supplies and materials, and equipment items. This is a requested increase of \$180,000 for the building operation costs of this new museum activity.

Additional air conditioning, heating, lighting, and communications systems for all the Smithsonian buildings as well as increasing numbers of visitors and exhibit spaces, and expanding educational, research, and cultural programs, have resulted in a higher consumption of utilities and communications as indicated in the following table. Increased unit costs for the utilities are reflected along with an upward trend in consumption.

<u>Type of Expense</u>	<u>1968</u>	<u>1969</u>	<u>1970</u> <u>Est.</u>	<u>1971</u> <u>Est.</u>
Electricity	\$534,000	\$595,000	\$640,000	\$705,000
Steam	299,000	322,000	373,000	416,000
Communications	209,000	235,000	265,000	285,000
Gas	<u>20,000</u>	<u>31,000</u>	<u>40,000</u>	<u>40,000</u>
Total	\$1,062,000	\$1,183,000	\$1,318,000	\$1,446,000

Smithsonian buildings and operations are not normal office-type activities. Air conditioning, heating, and lighting must be provided for visitors, during day and evening hours. Continuous operations of environmental control equipment are required to protect the objects in the collections from damage by changes in temperature and humidity. Greater public interest in the Smithsonian has increased communications costs.

An increase of \$147,000 is required to meet the following forecasted additional utility and related costs.

- \$65,000 for the cost of electricity required for the phased development of public exhibit and collection spaces in the Fine Arts and Portrait Galleries building; an additional 20,000 square feet of space in the Smithsonian building; and for full operating costs of the 500-ton capacity air conditioning equipment installed in the Smithsonian Institution building as part of the restoration and renovation program which will be completed in fiscal year 1971.
- \$43,000 to fund the cost of steam which has risen approximately 10 percent per thousand pounds over the past year.
- \$20,000 to meet the increasing costs for communications. Of this amount, \$18,740 are needed for the Federal Telecommunications System intercity telephone services as projected by the General Services Administration.
- \$19,000 for contract services for the installation and maintenance of security and fire detection systems, and for the repair and maintenance of approximately 50 elevators and escalators. This estimate is based on known higher labor and material costs.

Background on Workload in the Buildings Management Department

The Buildings Management Department provides utilities (water, gas, steam, electricity, and compressed air) to the Smithsonian's buildings and facilities. It services, repairs, and operates a wide variety of mechanical and

and electrical systems including: refrigeration, heating, temperature, humidity control, elevator and escalator, fire and smoke detection, and security devices. It furnishes communications, transportation, custodial, and checkroom services and is responsible for the protection and physical security of the buildings, exhibits, and collections of the Institution and for the safety of visitors and employees. The Department performs repairs, improvements, and alterations to the buildings and facilities. Engineering and construction services for Smithsonian projects, and the supervision of contract construction work, are part of the Department's responsibility. On specific building projects, the Department coordinates work performed by architects and engineers, handles contract supervision, and acts as liaison with contractors, the General Services Administration, and the Smithsonian staff. On a work order request basis, the Department also provides special custodial, protection, and fabrication services in support of the Institution's research, exhibition, and education programs and the care of the National Collections.

The number of work orders requesting the assistance and support of skilled mechanics and craftsmen and for special custodial services continue to increase as indicated below, placing heavy demands on the Department's manpower resources. In fiscal year 1969, the number of work orders increased by 25 percent over fiscal year 1968.

<u>Fiscal Year</u>	<u>Number of Work Orders</u>
1968	6,470
1969	8,180
1970	9,500 est.
1971	10,500 est.

These requests covered such needs as: improving space for exhibit, office, and laboratory purposes; installing special lighting in exhibit halls; extensive interior and exterior building repairs and modification including the repair or replacement of roofs, gutters, and flashings on all Smithsonian buildings to prevent damage or further deterioration; renovating and restoring antique furniture for exhibition purposes or use; and the design and fabrication of special scientific equipment, not obtainable on the open market, for research purposes. This equipment is used in such fields as anthropology, sedimentology, underwater archeology, and mineral sciences.

In addition to the regular duties of custodial service employees, which include cleaning restrooms, public lounges, offices, workrooms, laboratories, and exhibition areas, these employees provide many special requested services in connection with public service and educational programs during regular hours and on weekends and holidays. These employees are also responsible for office moves, transporting museum objects, operating elevators, and pest-control measures.

The Department provides physical security for the Smithsonian's museum and art gallery buildings, for the National Collections housed therein, and is responsible for the safety of all personnel, including general public visitors, staff, and visiting students and researchers.

Minimum acceptable security standards require specialized techniques and extensive installations to assure protection against fire, theft, and vandalism. An increasing burden is being put on the Smithsonian for the maintenance of adequate protective standards. New design concepts in exhibit halls and galleries result in a minimum amount of large open space which can be effectively protected by a single guard. In addition, many new exhibits are being presented in a fashion that prevents the use of protective devices such as barriers, cases, and enclosures which might intrude between the objects and the viewer. These

innovations, while desirable for public enjoyment and education, result in an ever-growing requirement for alert guards, each with a lesser area for proper surveillance. The increased use of sophisticated electronic protection devices only partially compensates for the absence of an onsite guard. In case of trouble or emergency, the response and action of a trained guard are still required.

In spite of rising crime rates across the nation, there was an actual decrease in the number of occurrences of theft, pilferage, and vandalism at the Smithsonian. The statistics covering such incidents show that the number decreased by about 14 percent from 240 in fiscal year to 211 in fiscal year 1969. This reversal of the former upward trend can be attributed to closer supervision at all levels, a continuing examination and improvement of security procedures, a more comprehensive and concentrated training program, and the increased use of electronic protection devices and communication equipment wherever practicable. The recent general upgrading of nonsupervisory guard positions undoubtedly contributed to this improved condition since it enhances recruiting and aided in the retention of better qualified guards.

In recognition of the need to insure that the operations of the Buildings Management Department are performed effectively in the most economical manner, a preliminary study by a reputable management consultant firm has been made of the organizational structure, financial management, and work control systems of this Department. The recommendations in this preliminary study are under review at the present time.

NECESSARY PAY INCREASES

Mrs. HANSEN. \$531,000 is requested for pay increases. How much of the total pay increase were you able to absorb?

Dr. RIPLEY. The Smithsonian, exclusive of the National Zoological Park, absorbed \$165,000 of the July 1969 general schedule pay increase and of the October 1969 wage increase.

LAPSE IN PERMANENT POSITIONS

Mrs. HANSEN. What is the total amount of lapse in permanent positions you have experienced to date in fiscal year 1970?

Dr. RIPLEY. Would it be permissible to insert that in the record? I don't have that figure right here.

(The information follows:)

LAPSE IN FULL-TIME PERMANENT POSITIONS

	1970 authorized positions	BOB June 30, 1970 ceiling	Employment, Apr. 3, 1970	Lapse, Apr. 3, 1970	End of year lapse
"Salaries and expenses"-----	2,077	1,953	1,889	188	124
Zoo-----	246	227	220	26	19
Total-----	2,323	2,180	2,109	214	143

16.2 percent.

NUMBER OF CURRENT VACANCIES

Mrs. HANSEN. You were authorized 2,077 positions in the 1970 appropriations. How many vacancies did you have as of the last reporting date?

Mr. BRADLEY. Madam Chairman, against the 2,077 authorized positions this year, our actual employment just a few days ago was 1,889 positions, or a current lapse of 188 positions now vacant.

Mrs. HANSEN. Is this due to retirement?

Mr. BRADLEY. Retirement, turnover; exactly.

BUREAU OF THE BUDGET CEILING ON PERSONNEL

Mrs. HANSEN. What personnel limitation, if any, has been imposed on you by the Bureau of the Budget?

Mr. BRADLEY. We have a year end ceiling as a target figure of 1,953 positions. That is actual employment, 1,953.

TRANSFER OF THE NATIONAL ZOOLOGICAL PARK OPERATING BUDGET

Mrs. HANSEN. You say \$131,000 of the pay increase relates to employees of the National Zoological Park which were previously financed from funds advanced from the District of Columbia. I think this would be a good place for you to give the committee a complete explanation of the transfer of the maintenance operations of the zoo from the District of Columbia to your budget.

Dr. RIPLEY. Madam Chairman, the question of the transfer of the Zoo previously funded in the District of Columbia budget has been requested by the President. We are very much aware of the potential

financial impact on this committee's appropriation act, but we believe that this transfer reflects the fact that the Zoo is a national zoo established in the Smithsonian by an Act of Congress in 1890. In addition, during the past year we have conducted a visitor survey showing that approximately 80 percent of the visitors to the Zoo, which numbered well over 3 million people at least last year, come from outside the District of Columbia, so that we believe that it is a national zoo.

Mrs. HANSEN. How many visitors were from the adjoining States of Maryland and Virginia?

Dr. RIPLEY. Of that 80 percent, probably 20 percent. In other words, over 50 percent are from outside the suburbs of the District of Columbia.

TOTAL BUDGET REQUEST FOR ZOO OPERATIONS

Mrs. HANSEN. What is the total amount included in your 1971 budget estimate for maintenance operations at the zoo?

Dr. RIPLEY. \$3,125,000, and 252 positions.

Mrs. HANSEN. Has the District of Columbia budget estimate for 1971 been reduced accordingly?

Dr. RIPLEY. We believe so. In the District of Columbia budget message of the President, the statement is included, Madam Chairman, that the \$3 million estimated for fiscal year 1971 has been included in Federal budget totals, thus providing equivalent relief to the city government.

EXPERIMENTAL EXHIBITS AND MUSEUM EDUCATION AND TRAINING

Mrs. HANSEN. Justify your increase of \$75,000 for the Office of Director General of Museums.

Dr. RIPLEY. This increase includes two items. One is two positions, and \$43,000 for experimental exhibits and museum education. The Smithsonian believes that we can do a better job of supplementing and reinforcing formal education at all levels, especially at the elementary and secondary levels by developing and testing and getting visitor reaction to new exhibit techniques. This is part of the program which I have already mentioned, Madam Chairman, as being one which we feel we are going to be called upon more and more to do, and we don't want to find ourselves going by default, and not being able to measure up to the educational demands put to us. The request includes an exhibit specialist and a psychologist, and supporting funds to plan and evaluate exhibition techniques. In addition, another item, one position and \$32,000 are requested for museum training under the National Museum Act. The museum receives about a thousand requests a year from other museums and national and international associations to provide training of museum personnel in some of these subjects we have mentioned before, conservation, exhibition, preservation of rare and valuable materials, and other museum practices. Although we can provide advice and informal on-the-job training, 500 persons came last year to the Smithsonian for this purpose; we cannot meet these growing requirements in an adequate way. A program assistant and \$26,000 for cooperative training grants in museum surveys and studies are requested and included in the \$75,000 request.

DATA PROCESSING FOR COLLECTIONS MANAGEMENT

Mrs. HANSEN. Justify your requirements for an additional \$200,000 for the National Museum of Natural History.

Dr. RIPLEY. This museum is in a pressing strait for the addition of more technicians and specialists. We are requesting eight positions and \$105,000 for data processing for collections management.

As the Chairman will recall, we have described over the past 3 years the evolution of our data processing assemblage. We are pressed to the greatest degree to serve as a basis for important research projects, many of them involving access to environmental data. Electronic data processing provides the only means by which we feel this can be done effectively. Our collections in botany, vertebrates, and fossils are especially important. We need to be able to relate the data contained in them effectively to the needs of oil geologists, forest breeders, oceanographers, conservationists, and, of course, to environmental studies.

We require eight museum technicians and specialists and funds for supplies, materials, equipment, and other services. In addition, we are requesting two positions and \$95,000 for special projects in archeology, biology, and marine sciences.

SEISTAN ARCHEOLOGICAL AND ECOLOGICAL PROJECT

Mrs. HANSEN. You are proposing a \$40,000 expenditure for a project in Seistan. Justify this request.

Dr. RIPLEY. Yes. We are very anxious to make an archeological and ecological exploration of the Seistan region which is a special desert area in southern Afghanistan, because it has a parallel, an extremely interesting comparison, to certain drastic changes which have occurred, especially in our own southwest. We are all familiar with the extraordinary changes that have occurred in certain desert-like areas in North America. This is an opportunity to find out how perhaps a permanently affected area has evolved in Asia. We feel that this area is of sufficient significance that an expedition will really contribute to the national interest.

(Discussion off the record.)

Dr. RIPLEY. It is particularly interesting that this area has effectively lost its water table, and yet at one time it had ample agriculture. There are very important connotations for the world at large in the future.

Mrs. HANSEN. Is any other country participating in this work?

Dr. RIPLEY. We would be working with the Afghan Government, of course. They would demand equal participation, but no other nation. We think this could be a pioneering study.

SPACE ARTIFACTS PROGRAM

Mrs. HANSEN. Justify your increase of \$50,000 for the National Air and Space Museum.

Dr. RIPLEY. This is essentially to support our space artifacts program, Madam Chairman. We would like to request four positions and \$50,000. More than 2 million persons a year, as you know, are visiting our air and space displays. Since the lunar rock has gone on display I think we have had over 900,000 visitors.

VISITORS TO THE NATIONAL MUSEUM OF HISTORY AND TECHNOLOGY

Mrs. HANSEN. Does this exhibit have the largest visitation within the framework of the Smithsonian?

Dr. RIPLEY. No, Madam Chairman; the largest visitation is the National Museum of History and Technology. This museum celebrated its 30 millionth visitor last month. We estimate that during the hours of the day that the Museum of History and Technology is open, somebody goes into those doors every 3 seconds.

Mrs. HANSEN. Why does this museum have the largest visitation?

Dr. RIPLEY. I think there are two reasons really. Aside from the fact that it is the sort of the heartland of American history, it is our newest and showiest building on the Mall, and it has very good facilities, including ample space, and, of course, a cafeteria and eating facilities, which we sadly lack in the other buildings. It just has become fantastically popular. I would, of course, put the American heritage theme first, but the fact that it is there, that it is terribly efficient and it works well and it is big contribute to its popularity. We had 81,000 people in it one particular day. All of this is enormously important.

NATIONAL ZOOLOGICAL PARK

Mrs. HANSEN. An additional \$180,000 is requested for maintenance of the National Zoological Park. What is the justification for this?

Dr. RIPLEY. I think I would like to ask Dr. Reed if he will speak to this, Madam Chairman, because it is his first appearance before this committee as Director of the National Zoological Park.

Dr. REED. Thank you, sir.

Mrs. HANSEN. I was sorry to hear about the sudden death of the white tiger cub.

Dr. REED. I was there, we think, about 2 hours after it occurred, at which time you could have bought the Zoo for 25 cents. There was a good used Director for sale. It was a terrible tragedy. However, the remaining cub is doing well under the care of a very good keeper.

The specific request that we are requesting of \$180,000 is primarily to strengthen programs throughout the Zoo. We are requesting a planning and design unit to assist us in modernizing and increasing the educational value of the exhibits as they now stand in our modernization program. We are requesting some equipment and one steamfitter. In the Department of Scientific Research we are requesting one keeper for the care of additional animals. We are trying to increase the all-around effectiveness and use of the Zoo, particularly along the lines of public education, graduate education, and in medical and veterinary research.

RHEUMATOID ARTHRITIS STUDIES

This past year, I might say, that we have had very fortunate cooperation with George Washington University in developing a rheumatoid arthritis program. One of our little gorillas—little, he is 6 years old and weighs several hundred pounds—came down with an acute case of rheumatoid arthritis, classical of what children have.

In cooperation with Dr. Thomas Brown, of George Washington, we were able to make the diagnosis serologically, using culture from the joints, and then effect a clinical cure to the point where in 4 months he gained something like 40 pounds, has completely dominated his female and has recently bred her, so that it is a clinical cure, a symptomatic cure. We don't know whether it is a complete cure yet. But this is the first time an animal model has been developed for this disease, and this is very important because we at the zoo, in cooperating with other medical units, and at no additional cost to the Government, have provided a lead and an insight into this particular distressing disease, especially in children.

Whereas, you know, arthritis was formerly considered a disease of condition, a theory is developing that some forms of arthritis are infective diseases and can be cured. We are working on this and this is only part of our cooperative studies. We are going into chromosome counts with Dartmouth University. We have supplied 97 sets of chromosomes. They have never been recorded before by man, and we are developing along all lines of medical, zoological science. We are trying to develop our public education at the graduate level—we have five graduate students who are working at the Zoo toward their advanced degrees—as well as in the public education area.

Mrs. HANSEN. Your work on arthritis is very interesting because it has such a detrimental effect on so many people.

Dr. RIPLEY. This is a potential breakthrough.

Dr. REED. Having seen how the gorilla suffered, and I have seen some young children suffer with it, too, it is remarkable.

OFFICE OF DIRECTOR, NATIONAL ZOOLOGICAL PARK

Mrs. HANSEN. You are requesting an increase of \$62,000 for the Office of Director, National Zoological Park. Describe the requirements for this increase.

Dr. REED. This is primarily for the planning and design unit. This request is for an architect, a draftsman, and a secretary. We need this particular position to further our developmental program at the Zoo, the physical renovation of the old plant. We need this architect, not to design buildings and exhibits, but to program the construction requirements at the Zoo so that outstanding architects can then do the actual design. The designing of the Zoo is so peculiar that programatically it has to be much further developed than in other types of buildings, like a school or an office building. We need this unit in order to make a proper and effective use of the construction money that we are given.

We also need a librarian for the hospital and research building. We do not have a librarian at the present time and we have some 30,000 books. We are developing the medical, zoological library, as well as the library for the general public, so that children and other users can effectively use the Zoo's resource material.

In addition there is a request for funds to meet the increased costs of operating items like utilities and that sort of thing.

INCREASED FOOD COSTS

Mrs. HANSEN. You are requesting an increase of \$68,000 for operation and maintenance. What has been your yearly food costs?

Dr. REED. The increase in food cost of the animals is running about 10 percent but it will fluctuate with individual animals. I believe that I have, if you so desire, information on how the cost of feeding individual animals has fluctuated.

Mrs. HANSEN. Please insert the information in the record.

Dr. REED. Yes; I will insert this in the record.

(The information follows:)

NATIONAL ZOOLOGICAL PARK COST FOR FEEDING CERTAIN ANIMALS

Animal and year	Number	Cost per animal			Total cost	
		Daily	Percent increase	Yearly	Daily	Yearly
Leopard:						
1956	5	\$1.06		\$331	\$5.30	\$1,654
1965	5	1.77		552	8.85	2,761
1969	6	2.29	29.3	714	13.74	4,287
Lion:						
1956	6	2.48		774	14.88	4,643
1965	3	4.13		1,289	12.37	3,860
1969	2	4.67	13.1	1,457	9.34	2,914
Tiger:						
1956	3	2.83		883	8.49	2,649
1965	7	4.72		1,473	33.04	10,308
1969	3	6.24	32.2	1,947	18.72	5,841
Jaguar:						
1956	3	1.06		331	3.18	992
1965	2	1.77		552	3.54	1,105
1969	2	2.16	22.0	674	4.32	1,348
Gorilla:						
1956	2	1.21		442	2.42	883
1965	4	1.80		657	7.20	2,628
1969	3	1.98	10.0	722	5.94	2,168
Orangutan:						
1956	3	.45		164	1.35	493
1965	3	.61		223	1.83	678
1969	4	1.77	90.2	646	7.08	2,584
Elephant:						
1956	2					
1965	4	3.75		1,369	15.00	5,475
1969	4	3.97	5.9	1,450	15.88	5,796
Rhinoceros:						
1956	3					
1965	6	1.25		456	7.00	2,738
1969	7	1.87	49.6	683	13.09	4,778
Reindeer:						
1956	0					
1965	15	.28		102	4.20	1,533
1969	9	.52	85.7	190	4.64	1,694
Pigmy hippo:						
1956	6					
1965	9	.32		117	2.88	1,051
1969	8	.68	112.5	248	5.44	1,986
Cape buffalo:						
1956	3					
1965	5	.90		329	4.50	1,643
1969	8	1.10	22.2	402	8.80	3,212
Giraffe:						
1956	6					
1965	3	1.20		438	3.60	1,314
1969	6	1.87	55.8	683	11.22	4,095
Nile hippo:						
1956						
1965		2.34		854		
1969	3	2.79	19.2	1,018	8.37	3,055
Kiwi-bird:						
1956						
1965						
1969	2	1.76	new	642	3.52	1,285

DEPARTMENT OF LIVING VERTEBRATES

Mrs. HANSEN. An increase of \$23,000 is requested for the Department of Living Vertebrates at the zoo. Please give us your justification.

Dr. REED. An amount of \$10,000 is for the cost of food increase, which is a 10-percent increase in the past year. An amount of \$5,000 is for sundry supplies and equipment that are needed for this particular department. This is the backbone of the Zoo. This is where we have 800-and-some-odd species of animals, 3,000 individual animals, and this takes care of all the sundry supplies, knives, wiping cloths, knife sharpeners, and equipment such as small swimming pool pumps. This is the miscellaneous material that we need to run such a remarkable city as we do have. An additional \$8,000 is for animal purchases to meet rapidly rising prices.

RENOVATION AT THE ZOO

Mrs. HANSEN. I think you must improve and update the environment of the zoo.

Dr. REED. It is our desire that we will update it and make it much more useful to the people. When I consider the Zoo's bear pits are 1901, 1910, I get fairly distressed with the condition. The bears seem to like their housing, they can live in an old-fashioned house, but I would like their exhibit to be more meaningful.

Mrs. HANSEN. More habitable?

Dr. REED. Yes.

PORTLAND, OREG., ZOO

Mrs. HANSEN. The Portland Zoo has been redone. They have a very beautiful park.

Dr. RIPLEY. They have a wonderful zoo.

Dr. REED. I am very proud to hear you say that because I started as a veterinarian at Portland. Dorothy Lee appointed me and I was in on the original designs and foundations of that zoo and I got so interested I gave up practice and came to Washington.

Mrs. HANSEN. It is a beautifully designed zoo.

Dr. REED. Yes, it is nice. I was just up in Seattle. I am very pleased with the new house they have up there, the reptile house.

Mr. WYATT. I shouldn't let this opportunity pass without mentioning that the Portland Zoo is in my congressional district.

Dr. REED. I was a constituent of yours, or at least of your district, for 7 years.

Mr. WYATT. If you lived on the west side, you were.

Dr. RIPLEY. As you know, Madam Chairman, this is the 4th year we have put off the reconstruction program in the Zoo.

Mrs. HANSEN. I am well aware that reconstruction has been postponed. I was flabbergasted when I first came to Washington to see the condition of the pens and the lack of habitat. The Salt Lake City, Portland, and Seattle zoos are in much better condition.

Dr. REED. Many times I am called to consult with these zoos to help build and advise them on their exhibits, and I can't get it done on my own zoo.

Mrs. HANSEN. You can't say "Please use ours as a standard model," can you?

Dr. REED. No, but I can show them some antique examples.

SCIENTIFIC RESEARCH DEPARTMENT

Mrs. HANSEN. You have requested another increase of \$9,000 for the Scientific Research Department at the zoo. Justify this request.

Dr. REED. Yes. The Scientific Research Department at the Zoo is leading primarily into behavior and ecology of the animals. Now, the Zoo is in a very, very fortunate position of having animals in its collection that can be studied as groups intimately. These animals, while they are not tame, are used to mankind so they react naturally in their own social habits without being terrified every time they see a man. In the wilds these animals would be dashing madly off.

Dr. RIPLEY. Or in the hospital, I might add.

Dr. REED. Yes, but these animals in the Zoo can be studied in depth and supplement the field studies. I might say we have five graduate students who are working on their advanced degrees at the Zoo. These people are doing very, very good work but with minimal support from the Zoo. This is where we are extending the Zoo's usefulness to the Nation through training young men and young women. We are also contributing basic knowledge about animals as it relates to their care and well-being in zoos, and this means that your zoo, the Portland zoo and all the rest of them, will benefit from our knowledge. Most recently there was a rather extensive field trip into Ceylon studying the ecology of the wild elephant. No one in Ceylon knew what the elephants were doing in the jungles. Now, they know all about them in captivity. Incidentally, we did an awful lot of work with the Portland Zoo, too, since they are the elephant capital of the United States.

Dr. RIPLEY. Elephants appear on the cover of the first issue of our magazine. This is the article in our magazine about which Dr. Reed is talking, by the research chief of this project, Dr. John Eisenberg.

Dr. REED. But our particular research unit will be developing more understanding of animals for the sake of contributing to man's knowledge without becoming a large unit, because we are relying upon visiting scientists, graduate students, and this sort of thing. We need one or two men on the staff but the rest of the staff will be graduate students coming in and out, making great use of the Zoo's resources.

ANIMAL HEALTH DEPARTMENT

Mrs. HANSEN. You are requesting an increase of \$18,000 in the Animal Health Department at the zoo. What is the need for this increase in funds?

Dr. REED. The Animal Health Department is the veterinary section and it is connected with the pathologist. We are requesting a simplified data storage and retrieval system to make maximum use of the information pertaining to the animals that are in the collection. I mentioned already our work with the gorilla on rheumatoid arthritis. We have other examples. When an animal dies there are 97 tissues taken from it. All of these are examined and, while the animal may die of, let's say, a broken neck if he hits a fence, or some other accident, he may have some pathological lesions or anatomical lesions that we don't know about. These anatomical factors could be keyed into the retrieval system, and made available at a later date for further studies. This is the requirement for information storage and retrieval we should have

at the Zoo to make maximum use of the animals. I am not happy when an accident or a death happens, but we must make maximum use of everything that we have at the Zoo for general medical knowledge, particularly veterinary medicine, and this will help the animals. This knowledge feeds right back into the care of the animal collections, which, of course, through our associations with other zoos throughout the Nation and the world helps all animals everywhere. This knowledge will get back to the field, too, and help the animals in their natural habitats.

SUMMARY OF BUDGET REQUEST FOR THE ZOO

Mrs. HANSEN. For the convenience of the committee, would you please insert a tabulation in the record at this point, showing the amounts available for the various activities of the zoo we have just discussed in 1970, and indicating your total requests for 1971, with a third column showing the increase for 1971. This tabulation should be broken down between increased program costs and increased pay costs.

(The information follows:)

	1970	1971	Increase	
			Pay	Program
Office of Director.....	\$799,000	\$917,000	\$56,000	\$62,000
Operations and Maintenance Department.....	989,000	1,099,000	42,000	68,000
Living Vertebrates Department.....	888,000	939,000	28,000	23,000
Scientific Research Department.....	68,000	79,000	2,000	9,000
Animal Health Department.....	70,000	91,000	3,000	18,000
Total.....	2,814,000	3,125,000	131,000	180,000

ANACOSTIA NEIGHBORHOOD MUSEUM

Mrs. HANSEN. An increase of \$75,000 is requested for the Anacostia Neighborhood Museum. What are the requirements here?

Dr. RIPLEY. We feel, Madam Chairman, that the museum does need some increased Federal funding because outside general support for general purposes has come to a halt. I have a sheet which I might, if you wish, introduce into the record telling the story about our funding from foundations and outside support in total to the Anacostia Museum during the fiscal years 1967 through 1970, if Madam Chairman would care to have that. It gives a comparative figure of our funding and where we stand.

We have received some 11 general-purpose grants totaling \$95,400 in the first 3 years of fund raising. Last year these stopped and I think that there are perhaps more than one reason. We have already discussed the sudden decline in general purpose grant funding. It is true, however, that we have had new grants totaling \$115,000 since fiscal year 1969. But these have all been for specific projects, which do not help our personnel and general operating costs. If anything, it places an added burden on them. This remains the situation today. We do have good prospects of receiving about \$150,000 in combined Government-private foundation grants for exhibits and accompanying community programs demonstrating urban problems, again a very worthwhile project, but it will be an overload on our regular staff. The effect of this seems to be that the foundations are saying, "We

helped you to start a successful experiment. We will help you take on new experiments but the basic responsibility of running the Anacostia Neighborhood Museum must now be up to the Smithsonian”.

Our request is for four positions and \$75,000. This is because the community demands on the museum for classes, workshops, school participation groups and other museum-related education services have increased steadily since the museum opened. Since opening, 117,000 children and other community residents have participated in the museum's activities. Part time and volunteer help from the community have been used, but we do need two full-time instructors to put the class and workshop activities on a more regular basis. An assistant director and clerk-typist are requested to help develop programs, assist with administrative matters, plan exhibits that meet community needs, and work with other groups interested in setting up similar museums. Funds in the amount of \$45,000 are requested also for space rental and custodial, exhibit, and workshop supplies and equipment.

DECLINE IN CRIME AS A RESULT OF THE MUSEUM

Mrs. HANSEN. Has there been any decline in crime in that area as a result of this museum?

Dr. RIPLEY. We noticed during the disturbances, Madam Chairman, in April 1968 that the museum seemed to exercise a beneficent effect and created a kind of ambiance around it for several blocks in every direction. I don't think I am exaggerating when I say that this was the case. The museum stayed open in the evening. The disturbances happened to be during evening opening hours, you know, and there was no trouble and no windows were broken or shops broken into in that immediate neighborhood. It was perfectly fascinating.

Mrs. HANSEN. Hasn't this museum had a great influence on rebuilding community pride in that area?

Dr. RIPLEY. I think that the District Council representative, Stanley Anderson, will agree with me when I say that this is so. It has had a tremendous amount.

RENWICK GALLERY OF ART

Mrs. HANSEN. An increase of \$100,000 is requested to prepare the Renwick Gallery for a public opening in fiscal year 1971. What is the current status of this phase of your activity?

Dr. RIPLEY. Would you like to speak to that, Mr. Blitzer? May I ask Mr. Blitzer?

Mr. BLITZER. Madam Chairman, we are still in the process of trying to refurbish the building in preparation for an opening. We have a construction request for that purpose. We are hoping now that we will be able by, say, the winter of this year to open parts of the museum, namely, the entrance hall, the stairway, the grand gallery on the top floor, and another room on the top floor that a private donor has offered to refurbish for us. The situation now is that we are close enough to an opening of the gallery that it seems to us that it is necessary to start assembling a small staff. It is not a museum that will ever have a large staff or that will ever have a collection of its own, but we need technicians and exhibit specialists in order to use all the resources that the Smithsonian will contribute toward completing exhibits.

Specifically, what we are asking for is four positions: an exhibit specialist, two technicians, and a clerk-typist for \$21,000; and other funds to assist in the preparation of exhibits and the purchase of equipment, cases, and lighting, and so forth, for exhibits.

TOTAL FUNDING FOR THE REHABILITATION OF THE RENWICK GALLERY

Mrs. HANSEN. Will you please insert in the record the total funds applied to date for the rehabilitation of the Renwick Gallery?

Mr. BLITZER. Certainly.

(The information follows:)

An amount of \$1,870,000 was appropriated in fiscal year 1967 for the rehabilitation of the Renwick Gallery. An additional \$100,000 was appropriated in fiscal year 1970 and in December 1969 a further \$100,000 was made available by an approved reprogramming action. In total, \$2,070,000 has been made available.

NATIONAL COLLECTION OF FINE ARTS PROGRAM

Mrs. HANSEN. Approximately \$1,055,000 of your request is for the National Collection of Fine Arts. Please summarize for the committee the current status of this gallery as far as collection of paintings, availability to the public, and overall administration is concerned.

Dr. RIPLEY. That is for the National Collection of Fine Arts?

Mrs. HANSEN. Yes.

Dr. RIPLEY. Yes, we will do so. May we insert that in the record, or would you like me to speak to it now?

Mrs. HANSEN. I think you may place it in the record.

(The information follows:)

The collections of the National Collection of Fine Arts currently contain approximately 13,000 objects: 3,500 paintings; 6,500 prints, drawings and watercolors; 1,000 pieces of sculpture; 350 miniatures; 1,600 decorative art objects. Since these objects were acquired over more than a century, and since for much of this time there was no clear policy regarding the role of the NCF, the collection covers a broad range of subject matter and of quality. Its greatest strength is in the field of the history of American art, and it is now the policy of the Smithsonian to build in particular upon this strength.

In May of 1968, the National Collection of Fine Arts was opened to the public for the first time in its own quarters in the old Patent Office building. At present, 11 galleries are open; nine additional galleries will be open when necessary work has been completed. All the collections of the NCF are available to scholars and students.

On January 1, 1970, Dr. Joshua C. Taylor, Harper professor of humanities and professor of art at the University of Chicago, became Director of the National Collection of Fine Arts. Upon assuming this position, Dr. Taylor immediately embarked upon a program for improving the storage and management of the collections in order to insure better control and to make the collections more accessible. At the same time, Dr. Taylor began a program for improving the exhibition of the permanent collection, including both rearrangement of existing galleries and opening of additional galleries. Dr. Taylor is also taking steps to strengthen the scholarly staff of the NCF and to acquire important works of art for the collection.

EXCHANGE OF PAINTINGS

Mrs. HANSEN. There was an article that appeared in the local newspapers recently relative to the exchange of paintings that took place, and it was alleged that you people did not get the better of the bargain. May we have your complete comment in this connection?

Dr. RIPLEY. In March 1969, David Scott, the former Director of the National Collection of Fine Arts, came to the Graham Gallery in New York at 1014 Madison Avenue and he saw hanging on the wall there an important painting called "Helen Brought to Paris" by the 18th century American master, Benjamin West. Mr. James Graham of the Gallery quoted Dr. Scott a price of \$10,000 for this work because that price happened to be on the tag on the back of the painting. He did not realize at the time that the price had been on that tag for some 6 years and was the wrong price tag. Actually, at the time the price was quoted to Dr. Scott the West was probably already worth some \$35,000 or more. In other words, the man who showed Dr. Scott the painting made a mistake. It was one of those things that happened. At that point Dr. Scott said that he was very much interested, naturally, because the price seemed to be very low and that he would attempt to raise the money privately to pay for the painting. When the mistake was discovered, the Graham Gallery decided that the ethical thing for them to do was to stand behind the mistake and say, indeed, that they had made a mistake but we could have the painting for the \$10,000. It was very important in their estimation, as well as in that of the National Collection of Fine Arts, that a Benjamin West should be represented in this gallery of American artists because we did not have a comparable one. The collection had had no such paintings by West and it is a very large painting, nearly 5 by 6 feet, an impressive painting, and, of course, well worth \$35,000.

Later on Mr. Robert Davis, who succeeded Dr. Scott as the Acting Director of the NCFEA after Dr. Scott's resignation, telephoned the Graham Gallery and advised that the Institution had been unable to obtain a private donor for the purchase of the West painting and asked if the Gallery would agree to exchange a painting by a non-American, a foreigner, which could be said to be of equivalent value.

The Graham Gallery agreed to the arrangement and when they came to Washington Mr. Davis showed a number of paintings which were of foreign origin and which by the terms of the receipt of the paintings in the National Collection, had no legal tie on them; that is, we could dispose of them. Included in these was a Flemish painting which the Graham Gallery eventually decided to accept. This was a respected painting attributed to Jan Massys, a minor 16th century work, a master, and it was felt that this would be probably worth today about \$35,000; in other words, equivalent in price to the price that they really wanted to get for the West. The upshot of this whole affair is that the Graham Gallery and the Smithsonian, the National Collection of Fine Arts, have come out with equivalent value. We have obtained a very important work by an American, important to us because it is by an artist of great importance in the 18th century, not well represented in our collection, and they have received a painting which they are going to be able to sell.

So those are the facts of the story.

Mr. BLITZER. We have an unsolicited letter, I may say, as a result of this newspaper article from Edgar Richardson, a leading American art historian, and former Chairman of the National Collection of Fine Arts Commission. It was his opinion that we came out very well indeed.

Mrs. HANSEN. Please insert a copy of that letter in the record.

Mr. BLITZER. Yes.

Dr. RIPLEY. We will place Dr. Richardson's letter in the record.
(The letter follows:)

The pertinent portion of Dr. Richardson's letter of January 3, 1970, is as follows:

"I think that the Museum (the National Collection of Fine Arts) got the better of the bargain. The Massys is a hard picture to sell today whereas the Benjamin West is quite salable."

Dr. RIPLEY. He at one time had been the Chairman of the Fine Arts Commission, and, of course, is the author of the leading book on American artists.

POLICY ON THE ACQUISITION OF OBJECTS

Mrs. HANSEN. Describe for the committee your general policy with regard to acquisitions of art objects for this gallery.

Dr. RIPLEY. Would you like to speak to that, Mr. Blitzer?

Mr. BLITZER. Certainly. It is our feeling, and it has been increasingly the feeling, I believe, of the Regents, the Secretary, the Advisory Commission, and the staff of the gallery, that the proper role of that art museum is to be a museum about the history of American art and the acquisition policy is to acquire as many important historical works of American art as possible.

POLICY ON THE DISPOSITION OF ART WORK

Mrs. HANSEN. What is your general policy on disposition of any art work now in possession of the gallery?

Dr. RIPLEY. Our general policy has always been extremely reserved in this connection. All museums, art museums particularly, tend to keep the collections that are given them. Of course when they are given under terms of a legal bequest which is binding on the museum, that they must be kept, they do keep them. In normal practice, museums may from time to time have objects which are not so bound, and in fact very many donors who are anxious to enhance the collections of the museum give pictures or other objects with the suggestion that at such time as a better example comes on the market, or some better object which the museum would rather have, they can trade or exchange the object. So you get both kinds of treatment, as it were, of museum objects by their donors. Some donors are very restrictive and ask, for example, that a room or a wing be named in their honor, and that all objects must also be on permanent exhibition. The Smithsonian has fallen heir to this kind of restrictive policy in the past. Other donors say, "I want to give you objects from my collection and if at some time you wish to dispose of them, you may."

So that we have both kinds of agreements. The only objects which we have disposed of from our art collections have been ones which are the type that by request or by gift are open. That is, they may, in our own judgment, do the sorts of things which have been done in these four cases, by the administrator of the collection. This will only be with cognizance of the Commission and the curators deciding to exchange a picture, or offer one in order to raise funds to buy objects more appropriate for the collection.

Mrs. HANSEN. Do you have a Commission on Fine Arts?

Dr. RIPLEY. We have a National Collection of Fine Arts Commission.

Mrs. HANSEN. Insert in the record the membership of that commission. Is the membership thoroughly familiar with all the activities of the gallery?

Dr. RIPLEY. Yes. Under our present regulations, they must approve in advance all acquisitions, exchanges, and sales. I may add, Madam Chairman, that this Commission makes its reports to the Board of Regents, who then must pass on the reports of the Commission.

(The information follows:)

NATIONAL COLLECTION OF FINE ARTS COMMISSION

- Mr. Leonard Baskin, department of art, Smith College, Northampton, Mass.
 Mr. William A. M. Burden, 630 Fifth Avenue, New York, N.Y.
 Mr. H. Page Cross, 157 East 75th Street, New York, N.Y.
 Dr. David Edward Finley, 1616 H Street NW., Washington, D.C.
 Mr. Martin Friedman, director, Walker Art Center, 1710 Lyndale Avenue, Minneapolis, Minn.
 Mr. Lloyd Goodrich, advisory director, Whitney Museum of American Art, 945 Madison Avenue, New York, N.Y.
 Mr. Walker Hancock, Lanesville, Gloucester, Mass.
 Mr. Bartlett H. Hayes, Jr., director, Addison Gallery of American Art, Andover, Mass.
 Mr. August Heckscher, 830 Fifth Avenue, New York, N.Y.
 Mr. Thomas C. Howe, 2709 Larkin Street, San Francisco, Calif.
 Mrs. J. Lee Johnson III, 1200 Broad Avenue, Fort Worth, Tex.
 Mr. Samuel C. Johnson, 1525 Howe Street, Racine, Wis.
 Dr. Wilmarth S. Lewis, Main Street, Farmington, Conn.
 Mr. Henry P. McIlhenny, 1914 Rittenhouse Square, Philadelphia, Pa.
 Mr. Ogden M. Pleissner, 35 East Ninth Street, New York, N.Y.
 Dr. Edgar P. Richardson, 285 Locust Street, Philadelphia, Pa.
 Dr. Charles H. Sawyer, University of Michigan Art Museum, Ann Arbor, Mich.
 Mrs. Otto L. Spaeth, 120 East 81st Street, New York, N.Y.
 S. Dillon Ripley (ex officio), Secretary, Smithsonian Institution, Washington, D.C.
 Executive committee: Dr. Finley, chairman; Mr. McIlhenny, Mr. Pleissner, Dr. Sawyer, ex officio, Dr. Hancock, ex officio, and Mr. Ripley, ex officio.
 Member emeritus: Dr. Alexander Wetmore, and Dr. Leonard Carmichael.
 Honorary members: Dr. Gilmore D. Clarke, Mr. Paul Mellon, Mr. Stowe Wengenrath, and Mr. Andrew Wyeth.

APPRAISING THE VALUE OF ART WORKS

Mrs. HANSEN. Describe fully for the committee the procedures you follow in appraising the value of art works you currently own or art works that you wish to obtain for this gallery.

Dr. RIPLEY. Maybe you would like to speak to that, Mr. Blitzer. I am less familiar with that.

Mr. BLITZER. Yes. It is our feeling that part of the job that is done by a professional appraiser has to do with studying the history of a painting and examining very carefully the condition of a painting. It is our feeling that our staff is probably better equipped to do that than the staff of any professional appraiser that we know of.

The place where we feel we need outside advice has to do with the market which is a constantly changing business in the art world. In every case that I know of, we have gotten the advice of people who are very close to the market to tell us what a painting, either that we own and might dispose of or that we might want, should be worth on the market. I may say, if I may revert to the question of the Benjamin

West, we have a letter dated April 23, 1969, from Mr. C. Hugh Hildesley of the Parke-Bernet Galleries in New York, stating that in his estimation the Massys painting that we owned would bring at auction between \$6,000 and \$8,000.

Mrs. HANSEN. Please insert the letter in the record?

Mr. BLITZER. I would be delighted to.

(The letter follows:)

PARKE-BERNET GALLERIES, INC.,
New York, N.Y., April 23, 1969.

Mr. WILLIAM TRUETTNER,
National Collection of Fine Arts,
Old Patent Office Building,
Washington, D.C.

DEAR MR. TRUETTNER: On the attached sheets I have listed the paintings which I examined for the National Collection of Fine Arts. I hope that my comments will explain the estimates in most cases.

We would be glad to offer the paintings which are not marked with an asterisk or cross at Parke-Bernet next autumn. Our commission on a sale of \$5,000 or less is 15 percent, and 12½ percent on a sale of more than \$5,000. We would be glad to receive pictures from you at any time during the summer.

Please let me know if you have any further questions. I look forward to hearing from you again.

Yours sincerely,

C. HUGH HILDESLEY.

PAINTINGS—NATIONAL COLLECTION OF FINE ARTS

- Guardi, Lagoon Scene: Sky damaged and repainted, \$15,000 to \$20,000.
Guardi, View of the Bacino di San Marco: Extensive repaint, \$2,000 to \$3,000.
Venetian School (Tiepolo), Baptism of Christ: Bad condition, \$1,500 to \$2,000.
*Bonnington, Barges, School work; damaged, \$150 to \$200.
Steen, Doctor's Visit, Signature wrong; school work, \$1,500 to \$2,000.
Drost, Young Girl, Possibly a late Nicolaes Maes; half cleaned, \$800 to \$1,000.
Davidson, Portrait of a Woman, \$1,200 to \$1,500.
Janssens Van Ceulen, Portrait: Said to be Madam Thep, \$2,000 to \$2,500.
Massys, Madonna and Child: Good example of his Italianate work, \$6,000 to \$8,000.
Gainsborough, Lord Mulgrave, Cut down; some restoration, \$4,000 to \$6,000.
Beechey, Duke of Sussex, \$1,500 to \$2,000.
*Francia, Mystic Marriage of St. Catherine: Mostly, if not all, 19th century.
*Titian, Cardinal: Roman School (?); needs more research.
Romney, Miss Kirckpatrick: Heavy restoration on face, \$1,800 to \$2,200.
†Richard Wilson, Roman Landscape: Value damaged by existence of second version, \$8,000 to \$10,000.
*Turner, View of Edinburgh: I do not believe this attribution is right, but suggest that a photograph of the picture be sent to Martin Butlin, Tate Gallery, London, for a further opinion.

ACQUISITION POLICY

Mrs. HANSEN. The allegation has been made that the procurement of pieces of art for this gallery has been purposely limited so as not to provide too much competition for the art collection that will eventually be housed in the Hirshhorn Museum. In view of this allegation, I think it would be proper for you to have an opportunity to declare straightforwardly what the Smithsonian policy is in this connection.

†Suggest sale in London, commission: 10 percent. Remaining paintings to be sold at Parke-Bernet.

*Not for auction.

Dr. RIPLEY. I can answer at once, Madam Chairman, that we deny the allegation completely. The only restrictions on the acquisition policies of the National Collection of Fine Arts that I can think of are two. One is the amount of funds or the ability of the staff to procure gifts or donations of contemporary or historic objects, and the second is the fact that in our general policy we prefer to think of the National Collection as a museum of the history of American art, and so we would prefer not to acquire works by foreign contemporary artists or historic foreign artists, if possible. We would not necessarily turn them down, but our preference would be to continue the development in the Nation's Capital of this National Collection in the field of American art.

Mrs. HANSEN. How about a portrait of King George?

Dr. RIPLEY. In terms of the National Portrait Gallery, King George was one of the most influential people in the formation of the United States of America. We should certainly have one in the National Portrait Gallery. As Dean Atcheson remarked in a talk at our Portrait Gallery this week, it was only by his effective stupidity that we were able to develop a country which came to the rescue of his country in World War II.

Mr. BLITZER. Not at a policy level, but at a practical level, there is a problem of acquiring works of art without sufficient funds to purchase them. This has been a problem.

Mrs. HANSEN. You don't have adequate acquisition funds?

Dr. RIPLEY. We have very limited acquisition funds.

Mrs. HANSEN. Another limiting factor is the amount of funds that you are required to spend for maintenance and security.

Dr. RIPLEY. Yes; this is true.

Mrs. HANSEN. You have had limited acquisition funds for many years because of budgetary restrictions.

Dr. RIPLEY. This is very true, and we, of course, have tried, as you know, prior to the opening of the National Collection of Fine Arts new quarters to build up a phased program of care, conservation, and maintenance, so that when the collection finally was placed on view, we would have a fairly respectable museum to start with. This has been a difficult project for all of us.

OPERATION OF THE NATIONAL COLLECTION OF FINE ARTS

Mrs. HANSEN. What is your evaluation of the operation and administration of the National Collection of Fine Arts to date? Has it reached its optimum potential?

Dr. RIPLEY. No. I would say that it has come along quite nicely, but that we have suffered from the fact that for the last 2 years there have been no increases requested for this collection of fine arts. It has been a static item in our budget, maintained at the program level of 1968. We have not been able to increase in the normal way that we would like this collection to do so.

JOSEPH H. HIRSHHORN MUSEUM AND SCULPTURE GARDEN

Mrs. HANSEN. \$726,000 is requested for the Joseph H. Hirshhorn Museum and Sculpture Garden. Give us a complete description of the fund requirements in this connection.

Dr. RIPLEY. This is a continuation of the gradual development of the collection for exhibition. I know that Mr. Bradley, Madam Chairman, and Mr. Blitzer will want to speak further on these points, but I can point out that in our testimony before your committee of the past 2 years, we have described the need to bring the Hirshhorn collections into museum status from what is essentially the fantastic collection of one man. That is, there is a considerable amount of cataloging, documenting, conservation, framing, and the like which must be phased into, if we are to be prepared to occupy the building and the sculpture garden. That is why we have requested seven positions and \$375,000 for next year, to attempt to prepare some 1,200 of the choicest paintings and pieces of sculpture from the more than 7,000 items in the gift collection for exhibit when the museum opens.

These paintings and pieces of sculpture, valued at \$20 million, must be examined, framed, cleaned, and in some cases restored prior to exhibit. The total cost of this effort, not including any additional paintings that might be contributed along the way by Mr. Hirshhorn, is estimated to cost \$460,000, of which \$160,000 are requested in fiscal year 1971.

In addition to the restoration effort, the staff must receive and process the more than 500 new works of art being added to the collection each year by Mr. Hirshhorn, conduct research and documentation for the opening, catalog the collection, and meet public inquiries which are, of course, continual. To do this, the museum requires an increased staff consisting of a curator, two exhibit technicians, three museum technicians, and a clerk-typist. Additional funds are requested for travel, transportation of objects, rental of storage space, printing, supplies and materials, equipment, and other services.

I may point out that the bulk of the collection, as the Chairman knows, is still housed in New York and Connecticut, because it is less expensive to maintain it near to the conservators and the exhibit technicians who can work on it. We can get better work for our dollar by leaving it on the spot and framing, working on it, cataloging it there. Also Mr. Hirshhorn continues, of course, to pay very substantial sums for insurance and maintenance and warehousing in addition. So that this, plus the fact that he is adding approximately \$1 million worth of objects each year means that although we in effect have the collection to prepare for the opening, we are getting an extraordinary amount of service from Mr. Hirshhorn and his facilities there.

LEGAL ASPECTS OF THE HIRSHHORN MUSEUM

Mrs. HANSEN. Some Members of Congress have questioned the outlay of funds for the Hirshhorn museum during the interim time since the museum was authorized.

In 1968 the Hirshhorn museum received a Federal appropriation for salaries and expenses of \$62,000 to take care of its works of art. In 1969 the Federal appropriation was \$159,000 and in fiscal 1970 it was \$236,000.

The contention has been made that the museum as such does not legally exist, because it has not yet been built, has no board of trustees, and does not have a collection. The works of art are contended to be in the private collection of Mr. Hirshhorn. Would you please comment on this?

Dr. RIPLEY. We would like very much.

Mr. BRADLEY. Madam Chairman, I will try to be brief. You mentioned a number of points there. Taking them up as I recall, first does the Hirshhorn museum legally exist. The answer is "Yes." There is an Act of November 7, 1966, that creates the Hirshhorn Museum, and in the pattern of other museums that we have had, such as the National Collection of Fine Arts, which was authorized in 1846, not by that name, but then reauthorized and reborn in 1938 by the Congress. It still did not then have a museum building, but it existed, and it served as an art gallery and an art function, a place to exhibit, to care for a collection, to study, to correspond with people and to curate a collection. So the Hirshhorn Museum does exist legally, because it was created by the Congress.

The fact that it does not yet have a building around it is certainly no reason why we should not be prepared to move into a \$16 million building when we do have it, 2½ years from now. We now have an excavation underway. It is about 20 feet below grade there and dirt is flying.

OWNERSHIP OF THE HIRSHHORN COLLECTION

Now, as to who owns the collection, the collection is owned by Mr. Hirshhorn, subject to certain conditions when he gave it. He has the title, but it is as if a house had a mortgage on it. There is a very substantial lien on his collection in favor of the Smithsonian Institution. Mr. Hirshhorn offered the collection. The President of the United States accepted the collection, both agreeing to certain conditions. The conditions were in a very few words that we produce a museum building in Washington to house it. But there were a lot of other conditions and we have met everyone of them. We have one more to meet, namely construction, and now thanks to this committee in no small part, we are about to meet the last one. The museum is under contract. The museum is under construction. Mr. Hirshhorn at the last minute made that possible.

We have a letter dated March 23, 1970, that we would like very much to introduce in the record wherein Mr. Hirshhorn gave the last \$1 million, in order to make it possible to sign a construction contract after the General Accounting Office found that it was possible to admit, under the rules of the General Services Administration, an error of three-quarters of a million dollars in the low bid.

(The letter follows:)

MARCH 23, 1970.

HON. S. DILLON RIPLEY,
*Secretary, the Smithsonian Institution,
Washington, D.C.*

DEAR MR. SECRETARY: We refer to your letter of March 9, 1970, in which you request, on behalf of the Smithsonian Institution, that the agreement between it, Joseph H. Hirshhorn and the Joseph H. Hirshhorn Foundation, Inc., dated May 17, 1966, be modified so as to permit the \$1 million cash gift which was to be used as an art acquisition fund to be used instead, to the extent necessary, to meet costs of completing the building.

The proposal as set forth in your letter of March 9, 1970, is acceptable to the undersigned; and the above-mentioned agreement of May 17, 1966 shall be deemed amended accordingly.

Under the agreed amendment to the basic agreement of May 17, 1966, the Joseph H. Hirshhorn Museum and Sculpture Garden will no longer begin its operations with an art acquisition fund of \$1 million. The purpose of that fund

was to augment the collection as described in the inventory of works of art which was set forth in the agreement of May 17, 1966. It is our hope that this purpose may be served by the contribution of additional works of art and to that end we wish to inform you of our intention to transfer to the Joseph H. Hirshhorn Museum and Sculpture Garden, upon its construction and completion, additional works of art having a total value of approximately \$1 million.

We appreciate that the Institution has been doing its utmost to meet the letter and spirit of our agreement and we are pleased to cooperate in a kindred manner to bring the project to fruition.

Sincerely yours,

THE JOSEPH H. HIRSHHORN FOUNDATION, INC.
JOSEPH H. HIRSHHORN.
By SAM HARRIS, *Secretary*.

Mr. BRADLEY. We have secured Congressional authorization, we have secured a site, Fine Arts Commission approval, and Planning Commission approval.

Mrs. HANSEN. Was the increase in construction costs funded entirely by Mr. Hirshhorn?

Mr. BRADLEY. Yes, Madam Chairman, by Mr. Hirshhorn. Mr. Hirshhorn also has agreed that if the Smithsonian satisfies these conditions, which we have satisfied no less than six or eight times by various actions, and we are in the process of satisfying the last one by constructing the building; Mr. Hirshhorn is legally bound to completely turn the collection over to the Smithsonian as he has already agreed to in 1966. Mr. Hirshhorn has also been occupying his time since 1966, 4 years, in acquiring additional works of art. These will be offered over and above the inventory that was presented to the Congress at the time of authorization. This is a project that is a joint venture. We have every reason to expect that Mr. Hirshhorn will present these works of art or a substantial portion of them to the Smithsonian for the Hirshhorn gallery.

Mr. Hirshhorn has agreed by the cited letter of March 23, 1970, that in exchange for the \$1 million which was going to be set up as an endowment fund upon completion of the building for the purchase of additional works of art. We had to pull that forward in order that there be a building, and sign a construction contract. He has agreed to that in writing. In exchange for the \$1 million trust fund to buy works of art, Mr. Hirshhorn has also agreed to present to the Smithsonian not less than \$1 million worth of additional art in furtherance of his earlier pledge to present money to buy art with. So you see we are in the position of defending what truly is a splendid gift to the American people, and it is a continuing, a living gift, because Mr. Hirshhorn believes that to continue the value of a collection of both older and contemporary art, one must work at it. What we need this staff for, even as we did for the National Collection of Fine Arts is because we have a responsibility to the Congress to be ready 2½ years from now, when we have a building down there, to put approximately 20 percent of his holdings brought up to exhibit standards, resplendent and ready for the American public to take a look.

TABULATION OF FUNDS FOR HIRSHHORN OPERATIONS

Mrs. HANSEN. Insert in the record a tabulation, by fiscal year, of all moneys, other than construction funds, expended for the Joseph H. Hirshhorn Museum. Please indicate in each instance the purpose for which the funds were expended.

(The information follows:)

	Fiscal year 1968	Fiscal year 1969	Fiscal year 1970 estimate
Personnel compensation.....	\$44,312	\$66,450	\$129,000
Personnel benefits.....	2,738	4,108	9,000
Travel and transportation of persons.....	1,756	1,500	11,000
Transportation of things.....	0	1,044	8,000
Rent, communications, and utilities.....	7,130	30,172	29,000
Printing and reproduction.....	0	0	4,000
Other services.....	0	24,301	124,000
Supplies and materials.....	3,753	9,619	16,000
Equipment.....	2,150	11,754	17,000
Total.....	61,839	148,948	347,000
Total (rounded).....	62,000	149,000	347,000

Personnel Compensation and Personnel Benefits are used to employ the Director and his staff. This staff is currently working on cataloging and matters relating to the curatorial responsibilities for the art collection under the agreement to give the collection to the Smithsonian. The staff also is involved in photographing all the paintings and other works, identifying those works which must be restored for public display, and performing research on the works of art and their creators.

Travel and transportation funds have been spent on administrative travel between Washington, D.C., and New York. Trips are also made to perform the research and to view modern display techniques which could possibly be used in the new museum.

Transportation funds are used to move the objects from the warehouse to the various restorers and back to the warehouse.

Rent is paid for offices for the staff in New York City and for several rooms in the warehouse where the collection is stored. These rooms are used to view the collection, to examine the works in need of restoration and to do the photographing and to take care of the additions.

Printing funds are for rent of a Xerox copier.

Other services funds are used to pay for the restoration and conservation of the collection. Some funds are also used for contracts to photograph the collection, train personnel, bookbinding, equipment, and repair.

Supplies and materials funds are used for various office supplies, to purchase auction catalogs which will become a part of the library. These catalogs make up an important reference tool for this kind of work. These funds are also used to purchase film and supplies for the photography that is done in-house.

Equipment funds were used for the initial equipping and furnishing of the offices and to purchase books and reprints for the reference collection.

CERTIFICATION OF USE OF HIRSHHORN FUNDS

Mrs. HANSEN. Can you certify to the committee that funds appropriated for this purpose were used for no other activity? For example, we understand most of this preliminary work is done in Connecticut. Is there any possibility that personnel or equipment being used for the preparation of the Joseph H. Hirshhorn collection could have been engaged in other activities not related to this preparation?

Dr. RIPLEY. We will be glad to certify to that and provide that for the record.

(The information follows:)

I hereby certify that the Hirshhorn Museum personnel, funds, and equipment have been used for the purposes of preparing the collection or for other activities directly related to the establishment and planned operation of a new art museum and sculpture garden. I know of no instances of uses for other purposes.

Signed S. Dillon Ripley, 22 April, 1970.

EXPENDING FEDERAL FUNDS ON THE HIRSHHORN COLLECTION

Mrs. HANSEN. I want a legal opinion on this, and if you are not prepared to give it at this time, I want you to have your General Counsel start work on it immediately so that it can be included in this record. The question has been raised as to the legality of expending Federal funds on the Hirshhorn art objects before they actually became the property of the United States.

If I recall the agreement correctly, title to the art collection would not be transferred to the United States until construction of the museum to house it had been completed.

Dr. RIPLEY. Yes; it will be provided.

(The information follows:)

USE OF FEDERAL FUNDS IN PREPARING WORKS OF ART FOR THE OPENING OF THE JOSEPH H. HIRSHHORN MUSEUM AND SCULPTURE GARDEN

Public Law 89-788, 20 United States Code, sections 76aa-ee, established the Joseph H. Hirshhorn Museum and Sculpture Garden, effective November 7, 1966, under the basic authority of the Board of Regents for "the increase and diffusion of knowledge among men." 20 United States Code, sections 41, 42. Appropriations were specifically authorized for the operation of the museum, and the Regents were empowered to employ a director, an administrator, and two curators for the "efficient administration" of the museum. 20 United States Code, sections 76dd, 76ee.

Contemporaneously with the passage of Public Law 89-788, and pursuant to this express congressional mandate to open and operate the museum, the Smithsonian submitted to the Bureau of the Budget a request for the first increment of funds for the 5-year program necessary to staff the museum and prepare for the opening. These funds, as well as those requested and appropriated for fiscal years 1969 and 1970, were clearly identified in the budget submissions to the Appropriations Committees, specifying the purposes, including cataloguing, research, and the selection, conservation, and restoration of about one-sixth of the collection for the initial opening to the public.

This interpretation and implementation of the requirements of Public Law 89-788 has been accepted by the Smithsonian from the outset and has been consistently reaffirmed by the Congress in the 3 years following the passage of the act. Any other course of action would have required a finding that Congress intended the museum building, constructed at public expense, to remain closed to the public for as much as 5 years after its completion. Such a view is without any support whatever in the language of the act or in its legislative history.

On the narrower question of the legality of expending appropriated funds for preparing for exhibit a portion of the collection before legal title thereto is fully vested in the Smithsonian, such expenditures are proper where they "reasonably appear to be incident to and essential in the accomplishment of the authorized purposes of the appropriation." 42 Comp. Gen. 480 (1963) at p. 485; See also 46 Comp. Gen. 25 (1966). Clearly the preparation of the works of art is essential to the opening of the museum to the public. A case in point is the opening of the National Gallery of Art, where, during construction of the building and prior to the transfer of the Mellon collection to the Smithsonian in 1941, appropriations were authorized and expended for these same purposes in 1939 and 1940.

In summary, there is no legal bar to the appropriation and expenditure of funds for the expeditious opening and operating of the Hirshhorn Museum and Sculpture Garden, including the preparation of selected works of art for exhibition.

22 APRIL 1970.

PETER G. POWERS,
General Counsel, Smithsonian Institution.

APPRAISING THE HIRSHHORN COLLECTION

Mrs. HANSEN. I would also like you to insert in the record a complete description of the procedures which were followed in appraising the potential value of the Hirshhorn collection. This information should contain the names of the appraisers doing the work with a summary background description of their qualifications.

Dr. RIPLEY. We would be very happy to do this. This, of course, is all in the original inventory of the collection when it was accepted, and it was gone over very carefully by more than one appraiser as I recall. We had a very elaborate inventory.

(The information follows:)

The diversification of the art of our time makes it impossible for a single appraiser to possess specialized knowledge of the current value of the paintings, sculpture, drawings, and graphics of all periods and historical schools. Thus, to insure expertise and firsthand knowledge of the art market, the method used to determine the current market value of the Hirshhorn collection was that used by established auction houses, dealers' associations, and appraisers in the fine arts, as well as the Department of Internal Revenue, all of whom receive precise, current data from the respected representatives of individual artists and schools of art.

The great magnitude and scope of the collection made it necessary to obtain appraisals from 148 independent sources. It would have been far easier to enlist a single appraiser, who, in turn, would have consulted the same primary sources of information—the specialized dealers.

Since the appraisal was made, from September 1965 to April 1966, art prices have continued their spectacular rise. Newspaper and television coverage of auction sales have publicized this upsurge. A reliable estimate indicates that in the field of American painting alone prices have risen 30 percent over the past 2 years.

In the field of sculpture this rise in values over the same period can be illustrated by a recent sculpture sale at Parke-Bernet Galleries, Inc., the Nation's leading auction house. On February 26, 1970, a "Standing Figure" by Alberto Giacometti, bronze, 41¼ inches high (catalog No. 62) was sold for \$150,000; a Giacometti "Standing Figure," bronze, 79 inches high, in the Hirshhorn collection, was appraised in 1965-66 at \$40,000. A second Giacometti, "Head of Diego," bronze, 11 inches high (catalog No. 40) was sold in the same sale for \$25,000; a "Head of Diego," bronze, 24¼ inches high, in the Hirshhorn collection was appraised in 1965-66 at \$15,000. In the same sale a bronze sculpture "Bourgeois D'Eclair," by Hans Arp, 23¼ inches high (catalog No. 65) sold for \$19,000; an Arp in the Hirshhorn collection, "Griffon," bronze, 22½ inches high, was appraised in 1965-66 at \$7,000.

One can only conclude that our 1965-66 evaluations were, if anything, conservative and that the value of the Hirshhorn collection has risen substantially since the gift was made by Mr. Hirshhorn to the Government of the United States.

SOURCES FOR APPRAISAL OF THE JOSEPH H. HIRSHHORN COLLECTION AND THE
JOSEPH H. HIRSHHORN FOUNDATION

Sidney L. Bergen, director, A C A Gallery, 63 East 57th Street, New York, N.Y.

Charles Alan, the Alan Gallery, 766 Madison Avenue, New York, N.Y.

Joan Ankrum, Ankrum Gallery, 910 N. La Cienega Boulevard, Los Angeles, Calif.

Michael St. Clair, director, Babcock Galleries, Inc., 805 Madison Avenue, New York, N.Y.

Mrs. William Baziotes, 90 La Salle Street, New York, N.Y.

Esther Bear, Esther Bear Gallery, 1125 High Road, Santa Barbara, Calif.

Claude Bernard Haim, Galerie Claude Bernard, 5-7 Rue Des Beaux-Arts, Paris, France.

- E. Beyeler, director, Galerie Beyeler, 4001 Basel, Baumleingasse, Switzerland.
 Bernard Black, Bernard Black Gallery, 1062 Madison Avenue, New York, N.Y.
 Alfredo Bonino, Galeria Bonino Ltd., 7 West 57th Street, New York, N.Y.
 Richard Sisson, assistant director, Grace Borgenicht Gallery Inc., 1018 Madison Avenue, New York, N.Y.
 Elie Borowski, director, Archeologie Classique et du Proche-Orient, Angensteinerstrasse 7, Basel, Switzerland.
 Gandy Brodie, West Townshend, Vermont.
 Robert Lewin, director, Brook Street Gallery, Ltd., 24 Brook Street, London, England.
 Charles A. Byron, Byron Gallery, Inc., 1018 Madison Avenue, New York, N.Y.
 Dorothy Cameron Moes, president and director, Dorothy Cameron Gallery Ltd., 840 Yonge Street, Toronto, Canada.
 Leo Castelli, president, Leo Castelli, Inc., 4 East 77th Street, New York, N.Y.
 Mrs. Madeleine Chalette-Lejwa, director, Galerie Chalette, 9 East 88th Street, New York, N.Y.
 Rochelle M. Wexler, director, Cober Gallery, 14 East 69th Street, New York, N.Y.
 Cecil Victor Comara, director, Comera Gallery, 8475 Melrose Place, Los Angeles, Calif.
 Karl Lunde, director, The Contemporaries, 992 Madison Avenue, New York, N.Y.
 Arne H. Ekstrom, Cordier & Ekstrom, Inc., 978 Madison Avenue, New York, N.Y.
 Mr. Roy Davis, director, the Davis Galleries, 231 East 60th Street, New York, N.Y.
 Peter Deitsch, Peter Deitsch Gallery, 24 East 81st Street, New York, N.Y.
 Mr. John Myers, director, Tibor De Nagy Gallery, 149 East 72d Street, New York, N.Y.
 Harold Diamond, 300 Central Park West, New York, N.Y.
 Terry Dintenfass, Terry Dintenfass, Inc., 18 East 67th Street, New York, N.Y.
 Mrs. Edith Gregor Halpert, director, The Downtown Gallery, 465 Park Avenue, New York, N.Y.
 George E. Dix, director, Durlacher Bros., 538 Madison Avenue, New York, N.Y.
 Mr. Charles Egan, Egan Gallery, 41 East 57th Street, New York, N.Y.
 Mr. Robert Elkon, Elkon Gallery, 1063 Madison Avenue, New York, N.Y.
 Andre Emmerich, Andre Emmerich Gallery, Inc., 41 East 57th Street, New York, N.Y.
 Rex Evans, Rex Evans Gallery, 748½ North La Cienega Boulevard, Los Angeles, Calif.
 Irving Blum, director, Ferus Gallery, 723 North La Cienega Boulevard, Los Angeles, Calif.
 Richard Feigen, Richard Feigen Gallery, 24 East 81st Street, New York, N.Y.
 Charles Feingarten, Feingarten Galleries, Inc., 324 N. Camden Drive Beverly Hills, Calif.
 Donald Droll, director, Fischbach Gallery, 799 Madison Avenue, New York, N.Y.
 Mrs. Bella Fishko, director, Forum Gallery, Inc., 1018 Madison Avenue, New York, N.Y.
 Mr. Robert Fraser, Robert Fraser Gallery, Ltd., 69 Duke Street, London W1, England.
 Mrs. Rose Fried, Rose Fried Gallery, 40 East 68th Street, New York, N.Y.
 M. Prevot-Douatte, director, Galerie De France, 3 Faubourg St. Honore, Paris VIII, France.
 Mr. Paul Haim, director, Galerie Europe, 22, Rue de Seine, Paris 6, France.
 Beatrice Monti, director, Gallerie dell'Ariete, Via S. Andrea 5, Milano, Italy.
 Alex Maguy, director, Galerie de L'Elysee, 69, Rue du Faubourg St. Honore, Paris VIII, France.
 Madame Denise Rene, Galerie Denise Rene, 124 Rue La Boetie, Paris, France.
 B. Kernerman, director, Galerie Israel Ltd., 63 Ben Yehuda Road, Tel-Aviv, Israel.
 Mr. Lawrence Rubin, Galerie Lawrence, 13 Rue de Seine, Paris VI, France.
 Otto Kallir, director, the Galerie St. Etienne, 24 West 57th Street, New York, N.Y.
 Allen Frumkin, the Frumkin Gallery, 41 East 57th Street, New York, N.Y.
 Mack Gilman, director, Gilman Galleries, 103 East Oak Street, Chicago, Ill.
 Peter Gimpel, Gimpel Fils Ltd., 50 South Molton Street, London, W1, England.
 Miss Anne Rotzler, director, Gimpel & Hanover Galerie, Zurich, Claridenstrasse 35, Zurich 8002, Switzerland.
 Noah Goldowsky, 1078 Madison Avenue, New York, N.Y.

- James Goodman, James Goodman Gallery, The Park Lane, 33 Gates Circle, Buffalo, N.Y.
- Robert Graham, The Graham Gallery, 1014 Madison Avenue, New York, N.Y.
- Richard Bellamy, director, the Green Gallery, 15 West 57th Street, New York, N.Y.
- Miss Ann Ross, director, the Greenross Gallery, 41 East 57th Street, New York, N.Y.
- Joseph Grippi, Grippi & Waddell Gallery, Inc., 15 East 57th Street, New York, N.Y.
- Stephen Hahn, Stephen Hahn Gallery, 960 Madison Avenue, New York, N.Y.
- Nathan Halper, Nat Halper Gallery, 90 La Salle Street, New York, N.Y.
- Victor J. Hammer, Hammer Galleries, 51 East 57th Street, New York, N.Y.
- David Hare, 34 Leroy Street, New York, N.Y.
- Mrs. Lily Harmon, 151 Central Park West, New York, N.Y.
- Norman Hirschl, Hirschl & Adler Galleries, Inc., 21 East 67th Street, New York, N.Y.
- Miss Erica Brausen, director, the Hanover Gallery, 32A St. George Street, Hanover Square, London, W.1, England.
- Miss Semiha Huber, Galerie Semiha Huber, Talstrasse 18, Zurich 1, Switzerland.
- Leonard Hutton, Leonard Hutton Galleries, 787 Madison Avenue, New York, N.Y.
- Brooks Jackson, director, Alexander Iolas Gallery, 15 East 55th Street, New York, N.Y.
- A. Isaacs, the Isaacs Gallery, 832 Yonge Street, Toronto 5, Canada.
- Martha Jackson, Martha Jackson Gallery, 32 East 69th Street, New York, N.Y.
- Sidney Janis, Sidney Janis Gallery, 15 East 57th Street, New York, N.Y.
- Paula Mailman, director, Paula Johnson Gallery, 11 East 78th Street, New York, N.Y.
- Alan Brandt, director, Galerie Kamer, 965 Madison Avenue, New York, N.Y.
- Paul Kantor, Paul Kantor Gallery, 348 North Camden Drive, Beverly Hills, Calif.
- Mrs. Tirca Karlis, Tirca Karlis Gallery, 1 Bank Street, New York, N.Y.
- Rudolf G. Wunderlich, director, Kennedy Galleries, Inc., 13 East 58th Street, New York, N.Y.
- Dong Kingman, 21 West 58th Street, New York, N.Y.
- Mr. J. J. Klejman, Klejman Gallery, 982 Madison Avenue, New York, N.Y.
- Mr. E. Coe Kerr, president, Mr. W. F. Davidson, executive vice-president, M. Knoedler & Co., Inc., 14 East 57th Street, New York, N.Y.
- Lionel Prejger, director, M. Knoedler & Co., 85 Rue Du Fg. St. Honore, Paris 8E, France.
- Samuel M. Kootz, Samuel M. Kootz Gallery Inc., 655 Madison Avenue, New York, N.Y.
- Jill Kornblee, Kornblee Gallery, 58 East 79th Street, New York, N.Y.
- Oscar Krasner, director, Krasner Gallery, Inc., 1061 Madison Avenue, New York, N.Y.
- Antoinette Krauschaar, Krauschaar Galleries, 1055 Madison Avenue, New York, N.Y.
- G. Blair Laing, G. Blair Laing Ltd., 194 Bloor St. West, Toronto 5, Canada.
- Mr. Flex Landau, The Felix Landau Gallery, 702 North La Cienega, Los Angeles, Calif.
- Richard K. Larcada, Richard K. Larcada Gallery, 23 East 67th Street, New York, N.Y.
- Plinio De Martiis, director, La Tartaruga Galleria D'Arte, Piazza Del Popolo 3, Rome, Italy.
- Eva Lee, Eva Lee Gallery, Inc., 450 Great Neck Road, Great Neck, Long Island, N.Y.
- John Lefebvre, Lefebvre Gallery, 47 East 77th Street, New York, N.Y.
- Nicholas E. Brown, director, the Leicester Galleries, 4 Audley Square, London W.1, England.
- Florence Lewison, Florence Lewison Gallery, 35 East 64th Street, New York, N.Y.
- Albert Loeb, Albert Loeb Gallery, 12 East 57th Street, New York, N.Y.
- Edward R. Lubin, Edward R. Lubin Inc., 17 East 64th Street, New York, N.Y.
- Francis K. Lloyd, president, Marlborough-Gerson Gallery, Inc., 41 East 57th Street, New York, N.Y.
- Mrs. Carla Panicali, director, Marlborough Galleria d'Arte, Via Gregoriana 5, Rome, Italy.

- Pierre Matisse, Pierre Matisse Gallery Corp., 41 East 57th Street, New York, N.Y.
 Alan D. Gruskin, director, Midtown Galleries, 11 East 57th Street, New York, N.Y.
 Harold C. Milch, the Milch Galleries, 21 East 67th Street, New York, N.Y.
 Boris Mirski, Boris Mirski Gallery, 166 Newbury Street, Boston, Mass.
 Miss Lilly T. Stern, director, Molton Gallery, 44 South Molton Street, London
 W. 1, England.
 Gallery, Moos, 169 Avenue Road, Toronto, Canada.
 Jerrold Morris, Jerrold Morris International Gallery Ltd., 130 Bloor W., Toronto
 5, Canada.
 Lee Nordness, Lee Nordness Gallery, 831 Madison Avenue, New York, N.Y.
 Federico Quadrani, director, Galleria Odyssea, 41 East 57th Street, New York,
 N.Y.
 Arnold B. Glimcher, director, the Pace Gallery, 9 West 57th Street, New York,
 N.Y.
 Betty Parsons, president, Jock Truman, director, Betty Parsons Gallery, 24 West
 57th Street, New York, N.Y.
 Mr. Louis Pollack, director, Peridot Gallery, 820 Madison Avenue, New York, N.Y.
 Mr. Klaus Perls, Perls Gallery, 1016 Madison Avenue, New York, N.Y.
 Mr. Frank Perls, Frank Perls Gallery, 32 Avenue Matignon, Paris 8, France.
 Elinor F. Poindexter, Poindexter Gallery, 21 West 56th Street, New York, N.Y.
 Bernard Rabin, Rabin & Krueger, 47 Halsey Street, Newark, N.J.
 Steven Radich, the Steven Radich Gallery, 818 Madison Avenue, New York, N.Y.
 John Clancy, director, Frank Rehn Gallery, 36 East 61st Street, New York, N.Y.
 Graham H. Reid, the Reid Gallery, Ltd., Mousehill House, Sandy Lane, Milford,
 Surrey, England.
 L. J. Wildridge, director, Roberts Gallery, Ltd., 641 Yonge Street, Toronto 5,
 Canada.
 Esther Robles, Esther Robles Gallery, 665 North La Cienega Boulevard, Los
 Angeles, Calif.
 Madame C. Goldscheider, conservateur, Musee Rodin, 77 Rue de Varenne, Paris
 VII, France.
 Michael Leon Freilich, director, Roko Gallery, 867 Madison Avenue, New York,
 N.Y.
 Alexandre Rosenberg, director, Paul Rosenberg & Co., 20 East 79th Street, New
 York, N.Y.
 Mrs. Eleanore Saidenberg, Saidenberg Gallery Inc., 1037 Madison Avenue, New
 York, N.Y.
 Harry Salpeter, Salpeter Gallery, 42 East 57th Street, New York, N.Y.
 Sarah H. Kendall, director, Bertha Schaefer Gallery, 41 East 57th Street, New
 York, N.Y.
 Theodore Schempp, Ted Schempp Gallery, 50 East 58th Street, N. Y., 7 Rue
 Gauguet, Paris 14, France.
 Robert Schoelkopf, Robert Schoelkopf Gallery, 825 Madison Avenue, New York,
 N.Y.
 Dr. J. Schoneman, Schoneman Galleries, Inc., 64 East 57th Street, New York,
 N.Y.
 Jane Wade, Jane Wade Gallery, 45 East 66th Street, New York, N.Y.
 Maynard Walker, Maynard Walker Gallery, 117 East 57th Street, New York,
 N.Y.
 Mrs. Gertrude Weyhe Dennis, Corporation Secretary, Weyhe Gallery, 794 Lex-
 ington Avenue, New York, N.Y.
 John Marin, Jr., director, Willard Gallery Inc., 29 East 72nd Street, New York,
 N.Y.
 A. Robert Whyte, director, World House Galleries, 987 Madison Avenue, New
 York, N.Y.
 Virginia M. Zabriskie, Zabriskie Gallery, 36 East 61st Street, New York, N.Y.
 Miss Dorothea Denslow, director, Sculpture Center, 167 East 69th Street, New
 York, N.Y.
 Herbert A. Kende, director, Selected Artists Galleries, Inc., 903 Madison Avenue,
 New York, N.Y.
 Mr. Abris Silberman, E. & A. Silberman Galleries, Inc., 1014 Madison Avenue,
 New York, N.Y.
 Charles E. Slatkin, Charles E. Slatkin Inc., Galleries, 115 East 92nd Street,
 New York, N.Y.
 Robert S. Sloan, Robert S. Sloan Gallery, 1078 Madison Avenue, New York, N.Y.
 Mrs. Eleanor Ward, director, Stable Gallery, 33 East 74th Street, New York,
 N.Y.

Philip A. Bruno, director, Staempfli Gallery, 47 East 77th Street, New York, N.Y.

Allan Stone, the Allan Stone Gallery, 48 East 86th Street, New York, N.Y.

Ira Spanierman, Spanierman Gallery, 1109 Lexington Avenue, New York, N.Y.

Mr. Jon Streep, Streep Gallery, 1050 Fifth Avenue, New York, N.Y.

David Stuart, David Stuart Galleries, 807 North La Cienega, Los Angeles, Calif.

Mr. Hyman Swetzoff, the Hyman Swetzoff Gallery, 119 Newbury Street, Boston, Mass.

Mr. Eugene Thaw, E. V. Thaw & Co., 50 East 78th Street, New York, N.Y.

E. J. Van Wisselingh, E. J. Van Wisselingh Gallery, Rokin 78-80, Amsterdam, Holland.

Catherine Viviano, Catherine Viviano Gallery Inc., 42 East 57th Street, New York, N.Y.

Victor Waddington, the Waddington Galleries, 2 Cork Street, London W. 1, England.

CONTROL OF THE COLLECTION

Mrs. HANSEN. Describe for the committee what control you have over the content of this art collection to date. In other words, we would be interested in knowing whether the donor has complete latitude to substitute paintings and other works of art for any of those listed in the inventory at the time the agreement was consummated.

Mr. BRADLEY. Madam Chairman, the terms of the agreement between the Smithsonian and Mr. Hirshhorn provide that in the interim, before title passes, Mr. Hirshhorn may add or sell or trade, but here is the part of it that should not be overlooked. This is critical to the understanding of this duality of interest, the legal, serious interest in that collection that the United States has. Mr. Hirshhorn, should he sell, and I understand he has sold very little, but to be responsive to your question, yes, he may sell or trade or add to, but in the event of any sale, or in the event of any trade, if there are any funds that come as a result of any differential in the collection, the agreement provides clearly that Mr. Hirshhorn, if there should be a balance, must turn the full balance over to the Smithsonian along with the collection. In other words, his role is that of a principal curator, where he worries about his collection, he tries to improve it, and if there is any money that happens to accrue as a result of those operations, which are really curatorial in effect, that comes to the Smithsonian along with the rest of the collection.

Dr. RIPLEY. This is in the agreement, so we don't lose anything on it. In fact, the chances are that we are going to gain a great deal by it. For example, if I could just detail one thing. In one or two cases his collection has so many examples of a particular artist that he may wish to trade or exchange one or two of these examples. If he has 60 paintings by one artist, he may trade or exchange in order to get two or three of another artist to enhance the value of the whole collection. In this sense, he is acting as our agent, because he is improving our own collection, but it is all specifically stated in the agreement that no moneys or no net profit can be retained by the donor.

Mrs. HANSEN. Please insert the agreement in the record.

Dr. RIPLEY. Yes; we certainly will.

(The information follows:)

That portion of the May 17, 1966, agreement between Joseph H. Hirshhorn and the Smithsonian Institution which refers to the use of funds from the sale of items in the collection, is quoted below:

"Eighth. Anything herein contained to the contrary notwithstanding, from and after the date of this Agreement and until title of the collections of works of art

shall pass to and be vested in the Institution, (a) the donor may transfer any of the works of art listed in exhibits A or A-1 to the Hirshhorn Foundation, and all works of art thus transferred shall remain subject to this agreement as if originally listed in exhibits B or B-1 instead of exhibits A or A-1 hereto; and (b) the donor and the Hirshhorn Foundation may loan or sell (for such consideration as the donor or the Hirshhorn Foundation, as the case may be, shall in his or its sole discretion deem appropriate) any of the works of art listed respectively in exhibits A, A-1, B and B-1 hereto and may also exchange the same for other works of art. No loan of such works of art shall be made for a period in excess of 180 days. The donor and the Hirshhorn Foundation respectively may invest and reinvest the net proceeds arising from any such sale of his or its works of art by acquiring additional works of art and/or purchasing obligations of the U.S. Government. All works of art so acquired by purchase or exchange shall become subject to the terms of this agreement as if originally listed in exhibits A, A-1, B or B-1 in the place and stead of the works of art sold or exchanged as aforesaid. After title to the collections of works of art shall pass to and be vested in the Institution, any obligations of the U.S. Government acquired as aforesaid and the balance, if any, of net proceeds not used for the acquisition of works of art or obligations of the U.S. Government shall be transferred and paid over to the Institution to be used solely for the purpose of acquiring works of art for the Joseph H. Hirshhorn Museum and Sculpture Garden, and pending such use, such funds and obligations shall be administered as provided in paragraph fifth hereof. Any insurance proceeds realized under policies carried by the donor and the Hirshhorn Foundation in accordance with the provisions of paragraph fourth hereof shall be treated in the same manner as net proceeds arising from the sale of the works of art of the donor and the Hirshhorn Foundation as provided in this paragraph eighth."

CHARGES AGAINST MR. HIRSHHORN

Mrs. HANSEN. I have before me a letter to a public agency which indicates certain charges against Mr. Hirshhorn.

Has inquiry been made by the Government of the United States as to the accuracy or relevancy of such charges?

Dr. RIPLEY. Yes, Madam Chairman. Inquiry has been made by an agency of the Government. At the time that the collection was presented to the United States and accepted by President Johnson, an inquiry was instituted and a report was made as a result of which President Johnson accepted the collection.

If I may, I would like to go off the record.

(Discussion off the record.)

Mrs. HANSEN. Mr. Wyatt.

Mr. WYATT. Let me ask this, Madam Chairman. I was on the Interior authorizing committee when we discussed this at one time, several years ago. Has the basic Hirshhorn contract been in the record of the hearings in full in the past?

Dr. RIPLEY. I am not sure.

Mr. BRADLEY. Yes, sir; the entire agreement. It was in three pieces. First, there was an Act of Congress authorizing the museum.

Mr. WYATT. In 1966?

Mr. BRADLEY. Yes; then there was an agreement between the Smithsonian and Mr. Hirshhorn where we included things that did not seem to have to be before the Congress. Then there was an extensive piece-by-piece inventory list which was testified to with an appraisal of the value of the collection we were talking about. This is in both House and Senate authorization hearings.

Mr. WYATT. The authorizing committee has it in the record?

Mr. BRADLEY. Yes.

Mr. WYATT. So we can say this has all been laid out publicly. I just wanted to be sure that it has been published and is available.

Dr. RIPLEY. I believe that the prior record is complete. Off the record.

(Discussion off the record.)

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

Mrs. HANSEN. Please justify your request for an increase of \$100,000 for the Smithsonian Tropical Research Institute.

Dr. RIPLEY. Would you like to speak to this, Dr. Galler?

Dr. GALLER. Yes, sir; Mr. Secretary.

Madam Chairman, the Barro Colorado Island facility at the Tropical Research Institute has been gathering some very valuable information with regard to tropical ecology for many, many years. In the light of increasing interest and the need for these kinds of data there is here an opportunity to measure the frequency, predictability, and the importance of a number of environmental fluctuations, and to pull all of this information together into a coherent body of data that can be used to assess changes in the tropical environment.

This would require increasing the staff by employing a forest ecologist on the staff and providing some additional support of supplies, materials, and equipment. In addition to that, the Tropical Research Institute has as part of its facilities two marine laboratories, a very unique situation, one on the Atlantic side and another on the Pacific side, and I might say that these two laboratories collectively have been carrying out some very interesting studies.

One study related to the ecological aspects of the proposed sea-level canal and another study related to the biological effects of an oil spill that occurred on the Atlantic side. We are beginning to discover some very interesting data that heretofore has not been reported. There seems to be more rapid ecological recovery that takes place in that tropical and semitropical domain than in temperate and north temperate regions, but we have here an unmatched opportunity to study on a comparative basis the marine biology and the oceanography of two oceans, a fresh water body; namely, Gatun Lake, all within a distance of a little over 40 miles from one central location.

I don't think there is another place like it anywhere in the world. So what we are asking for here is an additional marine biologist and one laboratory technician to man the Atlantic marine station. Finally I am sure I don't need to emphasize the relatively rapid deterioration that takes place in the tropics of both equipment and materials. We depend largely on surplus equipment, especially vehicles, obtained from the Canal Company, the Corps of Engineers, the Army, and the Navy. Since most of the time these vehicles are already on their last legs or their last wheels, we find that it is very important to have a trained machinist who will help us maintain these vehicles in reasonable condition so that they can be used by our staff as well as by visiting scientists.

I should say that we have had over 465 scientists, students, and other interested parties and investigators from the United States who have

come to the Tropical Research Institute, averaging about 5,090 visitor-days recorded through this year. Between 1969 and 1970 over 58 scientific publications have been derived from the research activities of our staff alone, and there are probably more than 100 publications that are associated with investigations that have been carried out by visiting scientists during that year.

It turns out, Madam Chairman, and please understand that we are not trying to toot our horn but it happens to be a fact, that the Smithsonian Tropical Research Institute today is the only nonapplied marine biological and, indeed, terrestrial biological tropical station available for U.S. scientists anywhere in the new world tropics, and the pressure, the demands from scientists in the United States and their graduate students for its use are increasing very rapidly.

RADIATION BIOLOGY LABORATORY

Mrs. HANSEN. Thank you. An increase of \$200,000 is requested for the Radiation Biology Laboratory. Give us the details on this request.

Dr. RIPLEY. A major portion of the laboratory's relocation from the basement of the Smithsonian building to its new site in Rockville has been completed. With the exception of the experiments in the greenhouse in the area south of the Smithsonian building, all of the staff, experiments, and usable equipment are now in the new building. The experiments that are left in the greenhouse will be moved as soon as adequate facilities are available. Presently, the activities of the staff are being devoted to unpacking, checking, calibrating, and reinstalling equipment, and supervising the construction and installation of growth chambers and other environmental-control facilities. It is hoped that a major portion of the research can be resumed by midsummer.

Fiscal year 1971 will be the first year of actual operations in the new laboratory building. For the first time since the laboratory's establishment in 1929, it has available, thanks to the Congress, a properly configured space of adequate size. The increased funding provided in the fiscal year 1970 appropriation will meet the basic costs of the building's rental and part of the mechanical and support staff required at the new location. Other building and operating costs, however, cannot be met with the current appropriation. Briefly summarized, these are the following.

Around-the-clock service support is needed to maintain the planned 11 cold rooms, 40 plant growing chambers, 8 walk-in environmental rooms, and a greenhouse. Basic custodial supplies, materials, and equipment are needed to clean an area of 50,000 square feet to prevent safety hazards and maintain the degree of cleanliness needed for precision experiments. Substantial utility costs will be incurred to operate the laboratory and electrical equipment required for 24-hour experiments. Library services must be provided since the already hard-pressed Smithsonian Institution libraries cannot provide services at this remote location. As many as possible of the laboratory's equipment items are being moved to the new location, but 50 percent of the equipment is more than 8 years old and in need of replacement. Security of the building, which has five outside entrances, must be provided using alarm systems to insure protection.

For these needs, we are requesting two operating engineers, an electrician, and a library technician at a cost of \$41,000, and an additional \$159,000 for utilities, contractual services, supplies, and equipment.

OFFICE OF ECOLOGY

Mrs. HANSEN. You are requesting an additional \$55,000 for the Office of Ecology. What are the requirements in this instance?

Dr. RIPLEY. This request, Madam Chairman, is for our Chesapeake Bay Center for Environmental Studies, an area we believe has unusual significance for the undertaking of important environmental baseline studies as well as providing fundamental knowledge to be used in community and resource planning in the areas adjacent to the Chesapeake Bay. This area has had considerable historical, recreational, and economic importance. Yet, it is being subjected to vast changes in its ecology due to industrialization, house development, and thermal and chemical pollution. Basic to any understanding of these changes or their solution is a comprehensive study of the Bay watershed, including investigations of energy output, biological productivity of the land and water areas, and pollution effects upon terrestrial and aquatic life.

Working closely with other agencies and universities concerned with these problems, the Smithsonian would acquire fundamental information using the facilities of the Chesapeake Bay Center as a base to better understand this valuable area. To do this, the Smithsonian needs to strengthen the program of the Center's activities by adding a resident ecologist and a program assistant. We also need funds for travel, research, and maintenance supplies and equipment, and other services. This is a request for two positions and \$49,000.

Simultaneously, we must improve security at the Bay Center in order to protect the natural conditions and balances as they now exist. The Center's utility to scientists depends upon the land and water areas remaining in an undisturbed state. While we are encouraging full use of the Center's natural areas by all individuals and groups, including members of the public who are generally interested in the environment, poachers, vandals, and other trespassers have on frequent occasion disturbed the environment as well as carefully designed experiments set up in the area. To prevent such occurrences, we are requesting a security officer at \$6,000 to patrol the area and the Center's buildings.

OFFICE OF OCEANOGRAPHY AND LIMNOLOGY

Mrs. HANSEN. Describe your needs for an additional \$150,000 for the Office of Oceanography and Limnology.

Dr. RIPLEY. This request, Madam Chairman, is for the Smithsonian Oceanographic Sorting Center which we believe is providing an unusual and valuable service to researchers concerned with marine resources and their use and protection. The Sorting Center receives and processes marine biological and geological samples, for use at their request, by more than 300 scientists in 27 countries in their research projects ranging from basic taxonomic studies to pollution control. In the past year, the Center sorted 3,500,000 specimens for 289 researchers, 5 of whom were in Federal agencies. In addition, the Center pro-

vides advice and assistance on specimen-related activities such as proper field collection of specimens.

The Center has made concerted efforts through the use of improved data-handling techniques and specimen-handling devices to increase its productivity and efficiency. However, the increased number of samples sent to the Center, some 10,000 samples a year each with the potential of many thousands of specimens when coupled with an increased demand for specimens, has created a growing backlog of unsorted materials. Unless these samples are processed and distributed quickly, many of them will become useless for research purposes. In order to raise the capacity of the Center to the point where it can meet the demand for specimens, we are requesting an additional seven sorter-technicians and a chemist, along with supporting funds for travel, preservation supplies, materials and equipment, and contractual and other services.

CENTER FOR THE STUDY OF MAN

Mrs. HANSEN. What is the requirement for an additional \$50,000 for the Center for the Study of Man?

Dr. RIPLEY. Madam Chairman, this request has two aspects. First, we are ready to begin the actual production work on the Handbook of North American Indians. For this we are requesting an editor, a research assistant, and a clerk-typist along with a small amount of supporting funds for travel, equipment, and contractual services.

We have spent the last 2 years largely on preliminary planning activities. We have compiled a master list of some 2,000 potential contributors to this handbook, which will be an encyclopedia of 15 or more volumes, summarizing the best current knowledge of prehistory and history of all Indian groups north of Mexico. We have held consultations and meetings to develop the handbook's format and contents. It is quite obvious that this project must be a nationwide, indeed an international, project because it must involve some people abroad who might be the only known or principal specialist in certain parts of this effort. We are including American Indians, anthropologists, historians, educators, and other specialists in research and anthropology. We have been carrying on considerable correspondence with these people. This work is finally placing the Center in a position where it is ready now to assemble a small staff of technical personnel to do the many editing tasks associated with the handbook.

The second part of our request is to obtain a small amount of Federal funds to continue an important small-grants program in urgent anthropology. We are seeking \$5,000 for this. The primary purpose of this program is to gather data on cultures and subcultures that are rapidly changing or disappearing as a result of economical or technical pressures. We have used a small amount of Foundation funds to award small grants from \$100 to \$1,000 each to qualified on-the-spot investigators to enable them to carry out research before the local changes become so pronounced as to make research difficult if not impossible. The ability to continue this small-grants program will enable the Smithsonian to continue an important aspect of what is its basic responsibility, that is the gathering of fundamental anthropological data and making this data available to the general public. For instance, one of our most recent grant recipients has reported that as a

result of the Center's assistance, he has discovered a new Pithecanthropus specimen which he has tentatively labeled "Java Man 8." This is a unique specimen since it is the first to be recovered with the upper jaw intact. The discoverer has informed the Center that as soon as he is able to get the specimen cleaned, he will be most happy to forward a detailed description to the Smithsonian for publication.

CENTER FOR SHORT-LIVED PHENOMENA

Mrs. HANSEN. Please justify the increase of \$25,000 for the Center for Short-Lived Phenomena.

Dr. RIPLEY. The Center for Short-Lived Phenomena acts as a unique clearinghouse for the receipt and quick dissemination of information on rare natural events which might otherwise go unobserved or uninvestigated. Last year, the Center participated in 146 geophysical, astrophysical, and biological events, compared with 68 events in the previous year. Over 250,000 event notifications were sent to 2,252 correspondents in 122 countries. Forty-six Federal agencies and departments are users of the Center's services.

The Center has been successful in obtaining funding for special projects, such as the Apollo flights, and it has started a subscription system for those individuals and organizations who are receivers, but not major contributors, of information and other supporting services. The success of the Center's regular operations, however, depends heavily upon an assured level of direct Federal appropriations in order to provide an assured and consistent level of reporting activity. In order to meet a growing workload, we are requesting a publication specialist at \$7,000 and funds for communications, printing, and computer services, the backbone of the Center's quick-alert capability.

MERIT OF THE CENTER FOR SHORT-LIVED PHENOMENA PROGRAM

Mrs. HANSEN. The committee has received informal information to the effect that the merits of this program are questionable. It has been alleged that this program duplicates the activities of several other scientific organizations and the urgency of acquiring this information is not as great as has been propounded. Do you have any rebuttal to these remarks?

Dr. RIPLEY. I can only say, Madam Chairman, that I am astonished by any such allegation. We know of none. We know of no equivalent organization. I have here the Annual Report for 1969 which is available for sale as a facility to the scientific community and which has sold 300 copies. The fact that the report was financed out of grants means that it is possible for us to attempt to recoup some part of the cost of producing these reports. We know of no comparable organization, Dr. Galler?

Dr. GALLER. I was going to ask, Mr. Secretary, if Madam Chairman would like, we can furnish for the record letters from more than 40 Federal agencies and departments of the United States who are coming to us.

(The information follows:)

LETTERS OF MERIT FOR THE CENTER FOR SHORT-LIVED PHENOMENA

FEDERAL COUNCIL FOR SCIENCE AND TECHNOLOGY,

Washington, D.C., May 14, 1968.

Dr. S. DILLON RIPLEY,
Secretary, Smithsonian Institution,
Washington, D.C.

DEAR DILLON: I was delighted to see the progress report from the Smithsonian Center for Short lived Phenomena. It is most impressive to see what the Center has been able to accomplish in its first three months.

The establishment of the Center certainly fills our need for a prompt, real time response to short-lived events such as volcanic eruptions, meteorites, and fireballs. The investigations of the Center, in cooperation with those of other Federal agencies, will provide a broad base of fundamental data for scientists throughout the world.

These studies are of great interest to all of us. I will ask the relevant committees of the Federal Council for Science and Technology; that is, the Interdepartmental Committee for Atmospheric Sciences, and the Committee on Solid Earth Sciences to include discussions of the Smithsonian Center for Short Lived Phenomena in their future agendas.

With best regards.

Sincerely,

DONALD F. HORNIG,
Chairman.

U.S. DEPARTMENT OF THE INTERIOR,
Washington, D.C., May 17, 1968.

Dr. SIDNEY R. GALLER,
Assistant Secretary, Science,
Smithsonian Institution, Washington, D.C.

DEAR SID: Thank you for forwarding copies of your reports on short-lived phenomena to us at the U.S. Geological Survey. The reports on Metis Shoal and the Mount Mayon eruptions have been very helpful to us. These reports have provided the most current assessment available of these natural phenomena. Your communications channels have been of special help during the Mount Mayon eruptions. Dr. Dallas Peek, Assistant Chief Geologist for Experimental Geology, has been in telephone contact with Mr. Citron several times to obtain the latest information on the Mayon eruptions.

I was pleased to note that you concur with the idea of coordinating Federal participation in the investigation of natural disasters through the Solid Earth Sciences Committee. I feel that this is of particular importance when teams of scientists make field investigations of natural phenomena in foreign countries. The important aspects of such investigations are a proper balance of scientific talent and equipment for the investigation, and a coordinated team approach to the investigation. I think we are very fortunate in the investigations being conducted by Melson and Moore on Mount Mayon. They are acting as a team and appear to complement each other's capabilities. In this case the success can probably be attributed to the caliber of men and the willingness of these men to work together as a team rather than to pre-planning of a team effort prior to their departure. There have been investigations on foreign soil during the past few years where the coordination in the field has not been as good and where inadequate capability was present for the investigation. These inadequately coordinated or staffed teams are the type that I hope can be avoided by coordination through the Solid Earth Sciences Committee.

The Center for Short-Lived Phenomena has already demonstrated its significant value in providing prompt and reliable information. A communications capability such as you have developed and are utilizing has the potential of providing the Solid Earth Sciences Committee with important information that is needed for coordinating investigations of natural disasters. I think it would be an excellent idea for you and Mr. Citron to make a presentation on the Center for Short-Lived Phenomena at the next meeting of the Solid Earth Sciences Committee so that all agencies can become aware of your activity.

Sincerely yours,

BILL, Director.

ACADEMY OF SCIENCES OF THE U.S.S.R.,
June 9, 1969.

Dr. ROBERT CITRON,
Project Administrator, Center for Short-Lived Phenomena, Smithsonian Institution, Cambridge, Mass.

DEAR DR. CITRON: I am glad to inform you that we have reached an agreement with the Central Seismic Station Moscow and with the Schmidt Institute of Physics of the Earth, Academy of Science of the U.S.S.R., that this station from now on will immediately be sending you cables concerning large earthquakes recorded at the station (with magnitude 7 and more and with about nine units of intensity in the epicenter and more). These cables will contain the following information: coordinates of the epicenter, its geographical region, magnitude, supposed unit of intensity, time (by Greenwich).

I take this opportunity to express my high opinion of the work done by your Center. The various manifestations of activity of our planet have not as yet been accumulated by anybody, they were not recorded and often escaped the attention of scientists. Now this gap is being bridged by your Center. The cards which you circulate are systematically received here and collected at the World Data Center where they are available to the Soviet community of specialists in different fields of science.

Sincerely yours,

Prof. V. V. BELOUSSOV, *President.*

U.S. DEPARTMENT OF THE INTERIOR,
Washington, D.C., October 14, 1969.

Dr. ROBERT CITRON,
*Smithsonian Institution,
Center for Short-Lived Phenomena,
Cambridge, Mass.*

DEAR BOB: The Center for Short-Lived Phenomena deserves a vote of thanks for doing a remarkably good job at an important but rather thankless task. At the IAVCEI Symposium at Oxford, I was impressed by the interest and enthusiasm in your service by a great number of volcanologists from observatories, universities, and other laboratories throughout the world.

I would like to congratulate you particularly for the recent card-777 by Dr. Rittman. Occasional summaries such as this are very useful supplements to the typical event reports. A similar card summarizing Kilauean activity for the last 8 months might also be of interest. I'll suggest this to Don Swanson at HVO.

Sincerely yours,

DALLAS L. PECK,
Assistant Chief Geologist Geochemistry and Geophysics.

AMERICAN INSTITUTE OF BIOLOGICAL SCIENCES,
Washington, D.C., March 30, 1970.

Mr. ROBERT CITRON,
*Director, Center for Short-Lived Phenomena,
Smithsonian Institution,
Cambridge, Mass.*

DEAR Mr. CITRON: Thank you for your letter of March 24, 1970 concerning the Center for Short-Lived Phenomena. I feel remiss in not writing to you sooner about the values of the Center to the scientific community. I and my colleagues at the AIBS find your notifications of the biological events to be very helpful. We have used information from the notifications in our bimonthly journal, *BioScience*, and also have used the notifications to alert appropriate people in many of our 42 Adherent Scientific Societies to the event.

We think the philosophy behind the Center is sound and the benefit of the recording of these events will become more and more evident in future years. One of the things that has been lacking, especially in ecology, for many years is the recording of what might appear at the time to be minor occurrences that bear on eventual major phenomena.

If there is any way in which we can aid you in the continuation of your project, please don't hesitate to call upon us.

Sincerely yours,

DONALD R. BEEM,
Assistant Director.

IOWA STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY,
Ames, Iowa, October 20, 1969.

DIRECTOR,
Smithsonian Institution,
Center for Short-Lived Phenomena,
Cambridge, Mass.

DEAR SIR: Since early October, we have been receiving your notifications of short-lived phenomena. We think this is one of the finest services to the geologic profession to have been initiated. It gives us a badly needed continuum of information regarding contemporary events that we can pass on to our students as graphic proof of the dynamism of earth processes.

In order to maximize our use of your fine publication series, we would like to know if you plan irregular distribution based on accumulation of some pre-determined number of information pieces or if each event is to be currently and individually reported. In any event, we would hope to remain on this best of mailing lists.

Very truly yours,

DONALD L. BIGGS,
Professor, Department of Earth Science.
KEITH M. HUSSEY,
Professor and Head, Department of Earth Science.

NATIONAL CENTER FOR ATMOSPHERIC RESEARCH,
Boulder, Colo., August 12, 1968.

Dr. ROBERT CITRON,
Smithsonian Institution Center for Short-Lived Phenomena, Cambridge, Mass.

DEAR DR. CITRON: I am writing this because I thought you might be interested in the extent to which we are using the excellent and up-to-date information which you have been sending us concerning short-lived phenomena. As you know, we sampled particles in the fume from the Mayon eruption and have obtained some very interesting information from our analysis of the samples. The information which you sent to us concerning Mayon subsequent to our sampling has been very helpful in interpreting the results. Particularly useful is the report by Dr. Melson. We will probably write up a paper for publication describing our results in the near future and I would appreciate your letting me know whether we can use some of the data in that report to aid in the interpretation of our findings. Of course, Dr. Melson and his associates at the Smithsonian would be given full credit for any such data we might include.

While no one from NCAR actually visited Arenal Volcano during its series of eruptions, we arranged to have the Air Force make flights into the fume and sample the particles in the fume using both Air Force filters and our own polystyrene fiber filters. The reports which you have been sending us concerning this eruption have been most valuable. These filters have now been returned to us and will be analyzed in the near future.

Again, thank you very much for the information which you have been sending. I feel that your center and its activities are filling a need that has long existed in the scientific world.

Yours very truly,

RICHARD D. CADLE,
Head, Chemistry and Microphysics Department.

U.S. DEPARTMENT OF THE INTERIOR,
Washington, D.C., March 31, 1970.

Mr. ROBERT CITRON,
Director, Center for Short-Lived Phenomena, Smithsonian Institution, Cambridge, Mass.

DEAR MR. CITRON: It is a pleasure for me to acknowledge the very fine service offered to the geological community by the Smithsonian Institution Center for Short-Lived Phenomena. Our chief interest here in the Geological Survey deals with volcanoes and volcanic eruption and your event cards give us a swift and accurate picture of what is happening in all parts of the world. Recently, we were especially concerned with the swarm of earthquakes and surface deformation that took place near Pozzuoli, Italy. Mr. David Squires, of your office, aided us greatly by telephoning us the most up-to-date information. And, as usual, the Center's event cards describing the Pozzuoli events carried shortly thereafter, providing us with considerable background information.

In short, we commend you and the Center for the effective job that you've done, and we look forward to the continuation of your valuable service.

Sincerely yours,

RICHARD S. FISKE,
Field Geochemistry and Petrology Branch.

U.S. DEPARTMENT OF THE INTERIOR,
FISH AND WILDLIFE SERVICE,
Highlands, N.J., March 26, 1969.

DIRECTOR,
Smithsonian Institution, Center for Short-Lived Phenomena, Cambridge, Mass.

DEAR SIR: I have been very impressed with your early-alert system. It has permitted this laboratory to remain abreast with several events in which we have comparable research interests, i.e., the offshore oil leakage in Santa Barbara.

As you may know, the International Biological Program (IBP) has recently formed several new subsections within its existing Marine Productivity (PM) section. One of these is called Theme B—The Impact of Man's Activities on the Marine Environment. Dr. L. A. Walford and I were named coordinators of this theme. The objects of the subsection are spelled out in the enclosure accompanying this letter.

It appears to me that your Smithsonian endeavor and the IBP program complement each other; the early-alert system brings sudden catastrophic changes to the attention of the research community and the IBP program serves to insure that there is cooperation and coordination between scientists working in similar areas of interests with regard to environmental change.

My question to you is: is there any way that you could distribute the enclosed notice in one of your news releases or via a 3 x 5 card release? I have requested of the editor of the Marine Pollution Bulletin that he include a notice of your early-alert system in a forthcoming issue. This would bring the program to the attention of many scientists, particularly marine scientists, in Great Britain and Europe.

Thanking you for your kind attention to this correspondence and looking forward to hearing from you in the near future, I remain,

Sincerely yours,

JACK B. PEARCE,
Research Biologist.

CENTRO REGIONAL DE SISMOLOGIA PARA AMERICA DEL SUR,
Lima, Perú, October 10, 1968.

Dr. ROBERT CITRON,
Smithsonian Institution, Cambridge, Mass.

DEAR DR. CITRON: The Center for Short-Lived Phenomena had filled the hopes of many scientist who wished to be up to date in all the world important events, and we warmly congratulate you and your institution for this worthy idea.

We will continued giving you all information that could be of your interest and we will like very much to be included in your list. No. 8, receivery information for all events.

Father German E. Saá, from Carnegie Institution is not longer working in Lima, then you could change his address to: R.P. German E. Saá, Programa Sismológico, Universidad de Chile, Casilla, Antofagasta, Chile.

Sincerely yours,

ENRIQUE GAJARDO W.,
Associate Director.

DARTMOUTH COLLEGE,
Hanover, N.H., May 6, 1968.

Mr. ROBERT CITRON,
Administrative Officer, Smithsonian Institution Center for Short-Lived Phenomena, Cambridge, Mass.

DEAR MR. CITRON: As indicated to you in earlier correspondence, I am very interested in the concept of the Center for Short-Lived Phenomena. The observation of volcanic activity on a worldwide basis has been very haphazard—excellent in some areas, nonexistent in others; and most often too little, too late. In my beginning efforts as editor of the *Catalog of Active Volcanoes of the World*, the most glaring problems are the vast differences in the quality of data from various areas, and the number of missed opportunities for collecting important data on the processes of active volcanism while it is taking place.

Your handling of the Mayon eruption in the Philippines has confirmed my hopes for the usefulness of your Center. You have sorted out a most complete narrative of the eruption from reliable sources, cross-checked these reports, and presented them in an accurate and interesting fashion while the eruption is still taking place. This is a real first in my estimation, and not only provides a valuable scientific document, but also a narrative which on daily posting has been enthusiastically followed by our geology students at Dartmouth.

You are also to be commended for not just taking a passive role in reporting the eruption at Mayon. Your actions were most effective in getting Dr. Melson and Dr. Moore to the Philippines as official scientific observers in time to witness critical phases of the eruption. Your apparent success in prompting and coordinating the military services to provide systematic aerial photography during the eruption will provide very valuable data on the details of visible phenomena of the eruption. These photos will also be of value in making quantitative estimates of the eruption products. Most of our records of volcanic eruptions suffer from having too many adjectives and not enough numbers.

Congratulations on an excellent job. You're off to a fine start. Keep it up.

Sincerely,

ROBERT W. DECKER,
Professor of Geophysics.

ADVANCED RESEARCH PROJECTS AGENCY,
Washington, D.C., July 25, 1968.

Dr. SIDNEY R. GALLER,
*Assistant Secretary for Science,
Smithsonian Institution,
Washington, D.C.*

DEAR DR. GALLER: I was quite interested in the work being undertaken by the Smithsonian Institution in supporting a Center for Short-Lived Phenomena, as reported at the meeting of the Committee on Solid Earth Sciences on July 23, 1968. This is an extremely worthwhile activity and one where major scientific benefits can accrue from a very modest amount of organizational activity.

As you may know, ARPA supports an active program in seismic research for the purpose of increasing the U.S. capability to detect, locate, and identify underground nuclear explosions. Part of this work consists of operating a Large Aperture Seismic Array in Montana. Data from the several hundred short-period seismometers in this array are sampled periodically, digitized, and, by this September, will be transmitted in real time to an analysis center in Washington. At the Center, the data will be automatically analyzed and a bulletin of seismic events prepared. This capability for rapid detection and location of earthquakes and aftershocks may be a useful adjunct to the Center. I would be happy to discuss this possibility with you further, at your convenience.

Sincerely,

S. J. LUKASIK,
Deputy Director.

INTERNATIONAL TSUNAMI INFORMATION CENTER,
Honolulu, Hawaii, March 27, 1970.

Mr. ROBERT CITRON,
*Director, Smithsonian Institution,
 Center for Short-Lived Phenomena,
 Cambridge, Mass.*

DEAR MR. CITRON : I would like to thank you for the valuable assistance your event notification and information service has given the ITIC. This information is used as another source of data on tsunamigenic earthquakes. One of this Center's mission is to collect all available data on tsunamis that occur in the world. The timely and accurate information contained in your reports is used as one of our primary source of action.

The International Tsunami Information Center appreciates your past assistance and looks forward to the receipt of future reports.

Sincerely,

ROBERT C. MUNSON,
Captain, USESSA, Director, ITIC.

U.S. DEPARTMENT OF THE INTERIOR,
Washington, D.C., December 18, 1968.

Mr. ROBERT CITRON,
*Center for Short-Lived Phenomena,
 Smithsonian Institution,
 Cambridge, Mass.*

DEAR MR. CITRON : As you probably know, the Geological Survey, through this branch, has for many years supplied technical and scientific assistance to countries experiencing geological disasters with the desire to render practical help and secondarily to advance scientific knowledge of these natural phenomena. We have worked closely with the Disaster Relief Coordinator of the Agency for International Development and with other agencies, including scientists of the Smithsonian Institution. Our activities in response to foreign disasters are in addition to our continuing program of technical assistance projects in many of the less developed countries.

This branch would find it exceedingly helpful to receive on a regular basis, all reports issued by your Center for Short-Lived Phenomena ; namely, list No. 8 as described in your brochure "Information about the Center." We in turn would be happy to help supply information for your center on short-lived events that occur in the areas of our field parties around the world. We will, I am certain, also find ourselves working cooperatively on specific field projects incident to the occurrence of future disastrous events through State Department channels.

I would be most grateful if you could place our name on your distribution list to receive all your reports automatically.

Sincerely yours,

JOHN A. REINEMUND,
Chief, Office of International Geosciences.

DEPARTMENT OF THE ARMY,
Fort Eustis, Va., June 5, 1969.

SMITHSONIAN INSTITUTION,
*Center for Short-Lived Phenomena,
 Cambridge, Mass.*

GENTLEMAN : The Transportation Engineering Agency is a field segment of the Military Traffic Management and Terminal Service (MTMTS), Washington, D.C. The Commander of MTMTS, by authority of the Secretary of Defense, is the single manager for Military Traffic, Land Transportation and Common User Ocean Terminals. As such, his primary mission is to provide transportation planning support to the Organization of the Joint Chiefs of Staff, the unified and specified commands, the military services, and the Department of Defense agencies in support of the plans of the Joint Chiefs of Staff and other military operations as required.

This Agency's mission is to administer the Department of the Army portion of the Department of Defense Engineering for Transportability program and to provide transportation engineering services, research, studies, and publications

in the areas of traffic engineering, transportation engineering, and transportability. A large portion of our effort is directed toward assuring safety during transportation of hazardous materials. In this connection, it would be most interesting and beneficial if we could be placed on your distribution list to receive "Event Information Reports" which relate to transportation accidents happening worldwide. If possible, we would also like to receive a copy of last year's "Proceedings."

It would be greatly appreciated if the above could be furnished at no cost to the Government, however, if there is to be a charge for these items, please advise so that we may proceed through our appropriate supply channels.

Sincerely yours,

C. H. PERRY,
Deputy Director.

U.S. DEPARTMENT OF COMMERCE,
Rockville, Md., September 16, 1968.

Mr. ROBERT CITRON,
*Smithsonian Institution, Center for Short-Lived-Phenomena,
Cambridge, Mass.*

DEAR MR. CITRON: I am enclosing a draft of the Seismological Notes—May-June 1968 which will be published in the December 1968 bulletin of the Seismological Society of America.

You will note that quotes from your bulletins are used notably for the Galapagos Islands events and the New Zealand earthquake. The notes appear far too late to be of interest to you except for possible statistical background but I thought you might be interested to know that these bulletins are useful in providing detail for the published record as well as a valuable source of early information.

Yours truly,

JAMES F. LANDER,
Chief, National Earthquake Information Center.

INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS,
INTERNATIONAL BIOLOGICAL PROGRAMME,
Paris, France, July 25, 1969.

The DIRECTOR,
*Smithsonian Institution,
Centre for Short-Lived Phenomena,
Cambridge, Mass.*

DEAR SIR: My attention has only recently been drawn to the quite excellent series of event notification and information cards published by your Center. As scientific coordinator of the international PT section of IBP the type of information you circulate with such expedience would prove of immense value to me in my work.

If it would be feasible for me to be put on the mailing list of the series, I would be most grateful.

Thanking you for your courtesies,
Sincerely Yours,

MALCOLM HADLEY.

U.S. DEPARTMENT OF THE INTERIOR,
Denver, Colo., August 16, 1968,

Dr. ROBERT CITRON,
*Smithsonian Institution,
Center for Short-Lived Phenomena,
Cambridge, Mass.*

DEAR DR. CITRON: I would like to take this opportunity to express my appreciation for receiving the timely and informative reports on geologic short-lived phenomena. These reports, such as the ones on the earthquakes in the Philippines and in Mexico, and the volcanic eruption of Mt. Arenal in Costa Rica have been especially valuable in helping to assess the magnitude of the events and the hazard to man. I will continue to look forward with interest to receiving this kind of information and I regard it as a valuable service.

Sincerely,

RICHARD W. LEMKE,
Geologist, Engineering Geology Branch.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
Arlington, Va.

Mr. ROBERT CITRON,
Director, Center for Short-Lived Phenomena,
Smithsonian Institution,
Cambridge, Mass.

DEAR MR. CITRON: We in the National Air Pollution Control Administration are interested in your program and are desirous of becoming a correspondent. The types of short-lived phenomena that would be of primary interest would involve (1) those gross atmospheric stagnation periods causing severe air pollution episodes, Donora, Pa.; Meuse Valley, France; London, and so forth, and (2) volcanic eruptions where heavy insults of SO₂ and dust have effected the adjacent ecosystem. Generally we would only require intelligence on those atmospheric events occurring outside of the United States inasmuch as we maintain close surveillance over the weather within the United States. Depending upon the location and magnitude of the event, NAPCA may elect to send observers to the site of the event.

Enclosed is the information form designating myself as the prime correspondent and Dr. Jones as my alternate.

Thank you for your consideration, and we look forward to utilizing your services.

Sincerely yours,

JOHN H. LUDWIG,
Assistant Commissioner for Science and Technology.

U.S. DEPARTMENT OF THE INTERIOR,
Flagstaff, Ariz., July 22, 1968.

Mr. ROBERT CITRON,
Smithsonian Institution Astrophysical Observatory,
Center for Short-Lived Phenomena,
Cambridge, Mass.

DEAR MR. CITRON: I am writing to request inclusion of a Central American worker on your list to receive available information reports. He is Sr. Rodrigo Saenz, Ministerio de Industrias, Direc. de Geologia, Minas Y Petroleo, San Jose, Costa Rica. Mr. Saenz has broad interests in earth science and operates a new volcanological and seismic station in Costa Rica.

I would like to take this opportunity to express my appreciation, and that of my colleagues, for the quality, content and expedition of your "short-lived phenomena" reportage during the last few months. Of special importance have been reports and preprints in chemistry, petrology and seismology by some of your investigators. Of greatest promise seems the opportunity for scientists from different disciplines and from a variety of countries and organizations to join forces in a prompt attack upon transient phenomena such as the eruptions of Mayon and Fernandina. Many thanks for your excellent efforts in this matter.

Very truly yours,

HAROLD L. KRIVOV,
Seismologist.

U.S. NAVAL OCEANOGRAPHIC OFFICE,
Washington, D.C., May 22, 1968.

Dr. ROBERT CITRON,
Administrative Officer, Center for Short-Lived Phenomena, Smithsonian Institution, Cambridge, Mass.

DEAR DR. CITRON: Your letter of April 15, 1968, announcing the establishment of the Center for Short-Lived Phenomena has been referred to this Office by Rear Adm. O. D. Waters, Jr., oceanographer of the Navy. The Naval Oceanographic Office is responsible for promulgating navigational information affecting safety at sea. It has an even broader responsibility in applying oceanographic knowledge in support of naval operations. Thus, this Office is interested in all natural marine phenomena and needs timely information on nearly all unusual events at sea. The most important of these have been listed on the enclosed form together with the other information requested of interested correspondents.

This new Center should perform a real service to scientists and other users of timely scientific information. We appreciate having this service made available to us.

Sincerely yours,

L. M. DeCAMP,
Captain, U.S. Navy, Commander.

DEPARTMENT OF THE NAVY,
San Diego, Calif., March 30, 1970.

Dr. ROBERT CITRON,
Director, Smithsonian Institution Center for Short-Lived Phenomena, Cambridge, Mass.

DEAR DR. CITRON: In reference to your letter of March 23, 1970, I don't think the value of the Center for Short-Lived Phenomena can be overly stressed. With current problems of pollution and the increased awareness of man's effect on his natural environment an efficient system of environmental monitoring is vital. It would be my hope as a scientist that the services of the Center will be continued, if not expanded.

Thank you again for allowing me as a non-Smithsonian scientist to benefit from the services of your event notification and information service. I sincerely hope for your continued success and operation in the future.

Sincerely,

W. E. EVANS,
Staff Scientist.

GEOLOGICAL SURVEY DEPARTMENT,
Suva, Fiji, May 9, 1968.

Mr. ROBERT CITRON,
Administrative Officer, Smithsonian Institution, Center for Short-Lived Phenomena, Cambridge, Mass.

DEAR MR. CITRON: I hope that by now you will have received the correspondent information form.

May I say how impressed I have been to receive this correspondence from you and to know that there are people aware of the need for information concerning short-lived phenomena. The idea seems to me to be a very important one.

Although involved in the study of volcanic eruptions in the past it has never been possible for me to obtain such detailed and magnificent reports of phenomena which could have a bearing on my time-space-energy relationship work. Your organization is to be congratulated on its ability to provide such valuable data as those on Mayon volcano and the recent submarine volcanic eruption in the Tonga area.

Yours sincerely,

J. C. GROVER,
Director of Geological Surveys.

UNIVERSITY OF OREGON,
DEPARTMENT OF GEOLOGY,
Eugene, Oreg., November 8, 1969.

SMITHSONIAN INSTITUTION,
*Center for Short-Lived Phenomena,
Cambridge, Mass.*

DEAR SIR: I am writing to let you know that I have enjoyed receiving your reports. The reports have been particularly useful in my large introductory lecture course where, periodically, I spend some time pointing out current volcanic and earthquake activity at the beginning of class. It certainly brings home the point that ours is a living planet and that such subjects as volcanism, etc., are not just historical or infrequent.

I would like very much to continue receiving the reports but am afraid that a personal subscription is beyond my budget. I have recommended that our department purchase a subscription, however, and would hope that this program be continued, and possibly even expanded.

Sincerely,

M. ALLAN KAYS,
Associate Professor.

U.S. DEPARTMENT OF COMMERCE,
March 27, 1970.

DIRECTOR,
*Center for Short-Lived Phenomena,
 Smithsonian Institution,
 Cambridge, Mass.*

DEAR MR. CITRON: Mr. Wirz, Chief of the Honolulu Observatory and I appreciate the receipt of your informative postcard bulletins. This information enables us to keep on top of current geophysical information which is of vital interest to us to carry out our scientific assignment. The data given is in a factual, concise manner that is easily filed for ready reference.

It would be appreciated if your organization would continue to include the Coast and Geodetic Survey, Honolulu Observatory, and National Tsunami Warning Center on your distribution list.

RAY M. SUNDEAN,
Director, National Tsunami Warning Center.
 HERMAN J. WIRZ, JR.,
Chief, Honolulu Observatory, Ewa Beach, Hawaii.

Endorsement.

NATIONAL ACADEMY OF SCIENCES,
Washington, D.C., June 13, 1969.

SMITHSONIAN INSTITUTION,
*Center for Short-Lived Phenomena,
 Cambridge, Mass.*

GENTLEMEN: I would very much appreciate your adding my name to your mailing list to receive "Event Information Reports." The Academy's interests cover many ecological problems and others described in your reports. I feel that they would provide useful background information for the preparation of some of our reports.

Sincerely,

VIRGINIA M. HAWKINS,
Editor-Writer, Office of Information.

U.S. DEPARTMENT OF THE INTERIOR,
 FISH AND WILDLIFE SERVICE,
Washington, D.C., November 1, 1968.

SMITHSONIAN CENTER FOR SHORT-LIVED PHENOMENA,
Cambridge, Mass.

GENTLEMEN: The new service of the Smithsonian at the Center for Short-Lived Phenomena has recently come to our attention. We will appreciate being alerted to "short lived phenomena" that may have significant effects on fish and wildlife. Please send more information on the capabilities of the Center for the purposes of determining what our contribution could be and to consider how best we may utilize information released from the Center.

Sincerely yours,

JACK H. BERRYMAN,
Chief, Division of Wildlife Services.

DISIN KENKYUSYO,
Tokyo, Japan, July 24, 1969.

DR. ROBERT CITRON,
Smithsonian Institution, Center for Short-Lived Phenomena, Cambridge, Mass.

DEAR DR. R. CITRON: I'm very much obliged to your institution for sending information on various kinds of geophysical phenomena of great use and importance. I'm conscious of it every time I receive the information card with precious news on it. I hope your institution will continue your valuable work for all the researchers around the world of the world phenomena.

As for the effects of Yellow Sea Earthquake in Japan we observed no geophysical circumstances. No geophysical and biological environment fissuring, landslides, Tsunami heights, and damage were recorded.

Sincerely yours,

D. SHIMOZURU,
Professor of the Earthquake Research Institute, the University of Tokyo.

DEPARTMENT OF TRANSPORTATION,
U. S. COAST GUARD,
Washington, D.C., March 19, 1970.

CENTER FOR SHORT-LIVED PHENOMENA,
*Smithsonian Astro-Physical Observatory,
Cambridge, Mass.*

DEAR SIR: The U.S. Coast Guard has had inquiries from the University of Newcastle-upon-Tyne, North Shields, Northumberland, United Kingdom, concerning the collection of certain maritime pollution data. In the Coast Guard's reply dated March 6, 1970, a copy of which you presumably have received, we suggested that the University address all of its inquiries to your Center. Conceivably, this procedure could save the entire scientific, academic, and industrial communities the requirement to draw their information from the many separate agencies concerned with pollution in its various forms. At the same time, we promised to take steps through the National Interagency Committee for Control of Pollution by Oil and Hazardous Materials to see that you are provided with current and detailed information on all marine spills of national and international interest. This we are in the process of beginning. It would assist us considerably if we could get from you exactly what it is you want reported and how you want the various agencies to do it. Once we have these requirements, we will present them to the National Interagency Committee.

If you would like to discuss this matter further, or if you have any other questions, please feel free to contact us.

Sincerely,

R. W. GOEHRING,
*Rear Admiral, U.S. Coast Guard,
Chief, Office of Operations.*

U.S. DEPARTMENT OF COMMERCE,
Boulder, Colo., August 6, 1968.

MR. ROBERT CITRON,
*Administrative Officer,
Smithsonian Institution,
Cambridge, Mass.*

DEAR SIR: I have just learned in connection with my inquiries on the eruption of Mount Arenal in Costa Rica that the Smithsonian Institution has established a Center for Short-Lived Phenomena. It appears to me that this Center is a very excellent idea and fills quite a serious void that has existed so far. I would hope that it will find the enthusiastic interest of the scientific community and that it may eventually become possible to expand it to some sort of "Scientific Minute men" organization which would consist of scientists and institutions who would be able and willing to investigate such a phenomenon "on call."

Please be so kind and send me information on the new Center and what I have to do to become a correspondent of the Center.

Sincerely yours,

HELMUT K. WEICKMANN,
Director, Atmospheric Physics and Chemistry Laboratory.

NATIONAL CENTER FOR ATMOSPHERIC RESEARCH,
Boulder, Colo., March 27, 1970.

DR. ROBERT CITRON,
*Director, Smithsonian Institution,
Center for Short-Lived Phenomena, Cambridge, Mass.*

DEAR DR. CITRON: I am writing to express my appreciation for the extremely valuable services we have received relating to event notification and information from the Center for Short-Lived Phenomena. As you know, we have been undertaking a continuing study of the nature of the particles in volcanic plumes, especially as these particles may affect the composition of the atmosphere. The continuing information which we have received during the course of eruptions has permitted us to judge whether or not to sample the fume from a particular eruption. Furthermore, the histories of these eruptions which you have subsequently published have helped us in evaluating our results.

My colleagues and I feel that the Center for Short-Lived Phenomena makes a very significant contribution to many segments of the scientific community, and we certainly hope that it can continue to furnish the types of services which we have received.

Yours very truly,

RICHARD D. CADLE,
Head, Chemistry Department.

U.S. DEPARTMENT OF COMMERCE,
Rockville, Md., April 1, 1970.

Mr. ROBERT CITRON,
*Director, Center for Short-Lived Phenomena,
Cambridge, Mass.*

DEAR MR. CITRON: I appreciate having your letter of March 23, 1970, giving me the opportunity of commenting on the helpful information received from the Center for Short-Lived Phenomena.

The preliminary earthquake data, as reflected on the card covering event 28-70 which has just been received, are especially useful to the Coast and Geodetic Survey. These data are valuable in providing additional information on earthquakes which often supplements information initiated by our National Earthquake Information Center personnel. I am pleased with the Smithsonian followup with inquiries to the source of incoming data usually from the foreign scientific community.

In addition to the earthquake data, I should like to recognize Smithsonian data on volcanic activities, meteorite sightings, oil spills, etc., which provide the scientific community with a consistent source of information not available elsewhere. Also useful is the material provided by the Center on the lunar seismology program and the recent landrise in Italy. Several collaborators in our Seismology Division who are correspondents to the Smithsonian program regularly receive the event notification reports covering all earth science events.

We find the services rendered by the Center and the collaboration which exists between our scientists and personnel of the Center of considerable benefit to the earth sciences programs of the Coast and Geodetic Survey.

Sincerely,

DON A. JONES,
Director, Coast and Geodetic Survey.

UNITED NATIONS EDUCATIONAL, SCIENTIFIC
AND CULTURAL ORGANIZATION,
Paris, France, April 2, 1970.

Dr. ROBERT CITRON,
Director, Smithsonian Institution, Center for Short-Lived Phenomena, Cambridge, Mass.

DEAR DR. CITRON: I am sending you today, under separate cover and by air-mail, a copy of the second number of our Annual Summary of Information on Natural Disasters, covering the year 1967. The third number, for 1968, is in press and you will receive a copy in a few weeks' time.

In preparing this third number we have been able to draw for the first time on the wealth of information contained in the event cards issued by your Center since the beginning of 1968, and I may say that this has greatly assisted us in our task of compilation, particularly with regard to volcanic eruptions. Full acknowledgment of this will be made in our publication.

You will be interested to know that UNESCO has been able to send missions of experts to make field studies of several of the events reported by your Center since January 1968. We shall continue to keep you informed of such missions, and look forward to maintaining and strengthening our cooperation in this matter.

Yours sincerely,

E. M. FOURNIER D'ALBE,
Department of Environmental Sciences.

EARTH SCIENCE CURRICULUM PROJECT,
Boulder, Colo., April 1, 1970.

Dr. ROBERT CITRON,
Center for Short-Lived Phenomena, Smithsonian Institution, Cambridge, Mass.

DEAR DR. CITRON: We of the earth science curriculum project have been very much pleased by the services being provided by the Center for Short-Lived Phenomena. Your event notification and information services are of great use to secondary school earth science teachers who are using ESCP material. They are also of great potential value to teacher trainers. We congratulate you on the high quality of your reporting and hope that you will continue this important service.

Yours very truly,

WILLIAM D. ROMEX, *Director.*

U.S. DEPARTMENT OF THE INTERIOR,
Menlo Park, Calif., April 1, 1970.

Dr. ROBERT CITRON,
Director, Smithsonian Institution, Center for Short-Lived Phenomena, Cambridge, Mass.

DEAR DR. CITRON: We have found the cards describing "short lived phenomena" that your office distributes an excellent way to keep track of seismic events that occur throughout the world. In our work with environmental hazards, we are extremely interested in earthquake reports. These cards give us the opportunity to quickly evaluate other events, compare them with our local geologic conditions, and determine which we should follow up by inquiry or on the spot investigation.

Your cards, which are specific, concise, and factual, provide a capsule view of these events without the need to evaluate and interpret news accounts. We certainly do appreciate their availability.

Sincerely yours,

ARTHUR GRANTZ,
Chief, Branch of Pacific Environmental Geology.

DOUGLAS ADVANCED RESEARCH LABORATORIES,
Huntington Beach, Calif., April 1, 1970.

Dr. ROBERT CITRON,
Director, Smithsonian Institution, Center for Short-Lived Phenomena, Cambridge, Mass.

DEAR DR. CITRON: What I find particularly valuable in the operation of the Center for Short-Lived Phenomena is its timeliness and technical excellence. There is no substitute for the telephone call or airmail post card advising of the beginning of an event for those scientists interested in studying the phenomena. I recall your early communications with me in 1968 concerning the San Fernandina volcanic explosion. Since that event, the preexplosion photos that I took were circulated to scientists who researched the crater after the explosion. I refer specifically to Dr. Keith Howard of the U.S. Geological Survey and Dr. Robert Bowman of San Fernando State College. My point in citing this one event is to show how communication among scientists has been promoted by the service the Center performs and how much geological and biological fallout results from the Center's activities. The span of interest of the Center is likewise commendable. Immediate knowledge of transients on the moon is just as vital as volcanic eruptions on the earth. In fact, I think that some lunar transients might indeed be volcanic eruptions.

There is still one transient phenomenon that you haven't documented yet and I wish the Center as many decades of support as will be required to document it; I refer to the flashing arcs associated with volcanic eruptions reported by Perret. I enclose a reprint describing it.

Cordially,

JACK GREEN, *Research Scientist.*

U.S. DEPARTMENT OF COMMERCE,
Boulder, Colo., April 1, 1970.

MR. ROBERT CITRON,
Director, Center for Short-Lived Phenomena,
Smithsonian Institution,
Cambridge, Mass.

DEAR MR. CITRON: For some time now I have been intending to write you to let you know how valuable the information distributed by your Center for Short-Lived Phenomena has been to us. This information makes it possible to follow quickly and intensively many short-lived events of considerable interest to us here in ESSA. I know at present of no other way to get this information as quickly, reliably, and comprehensively.

I am hoping that the very severe budget cuts that will be made in Government will not have a very debilitating effect on your operations.

Sincerely yours,

JOHN S. RINEHART,
Senior Research Fellow.

CALIFORNIA INSTITUTE OF TECHNOLOGY,
Pasadena, Calif., April 2, 1970.

MR. ROBERT CITRON,
Director, Smithsonian Institution,
Center of Short-Lived Phenomena,
Cambridge, Mass.

DEAR MR. CITRON: It is a pleasure to write this letter in appreciation of the services rendered by the Center.

Years of experience with first reports of earthquakes and related events have made me keenly aware of the desirability of reliable early information from authentic sources. Even though such reports are preliminary, and subject to significant later revisions, they are often permanently useful.

On several occasions lately, reports from the Center have enabled me to include, in manuscripts under preparation, notices of events for which authentic data were not otherwise available. Sometimes it has been possible later to insert references to publication; but in some instances citation of the Center reports has had to be retained.

While I am chiefly concerned with tectonic earthquakes, I find the reports on volcanic activity very helpful. Sometimes an eruption is associated with a remarkable earthquake swarm, as in the Galápagos (Fernandina), 1968. On other occasions eruptions tend to be confused with unrelated earthquakes at about the same time.

In return, personnel at this Laboratory will continue to furnish information on events of interest in our area. Part of our obligation is in forestalling misinformation from getting into circulation. Thus, not long ago there occurred one of the occasional earthquake swarms in the Gulf of California. There was a rumor of associated volcanic activity; we were able to state very soon that this was unfounded.

I have contributed critical comments on some of the wilder reports reaching the Center from well-intentioned but misguided volunteers, or in sensationally edited press releases.

Often first news of some unusual event—for instance, the upheaval at Pozzuoli—reaches us through press channels. When we are asked for comment, it is a great advantage to be able to say that we expect authentic information soon. By the time inquiries reach us in correspondence, usually we have reports from the Center.

Misinformation grows and expands readily, and the Center does much to nip it in the bud. In these few years there is evident improvement with accumulated experience in handling new data; publication from the Center setting forth its staff experience, including detection and avoidance of erroneous reports, would be generally helpful.

We have just received the first notification card on the Turkish earthquake disaster of March 28 and are looking forward with interest to detailed reports.

Very sincerely yours,

CHARLES F. RICHTER,
Professor of Seismology.

U. S. DEPARTMENT OF THE INTERIOR,
Hawaii National Park, Hawaii, March 27, 1970.

DR. ROBERT CITRON,
*Director, Smithsonian Institution,
 Center for Short-Lived Phenomena,
 Cambridge, Mass.*

DEAR DR. CITRON: I was astonished at the great number of variety of events that were reported and thereby received attention during the past year of operation of the Center for Short-Lived Phenomena.

The operation certainly fills a huge gap in the spectrum of information media available to scientists throughout the world, and the apparent accomplishment shows that the gap is being well filled.

We look forward to an even more successful and useful year.

Sincerely,

H. A. POWERS,
Hawaiian Volcano Observatory.

Mrs. HANSEN. Do you work with this Geological Survey on this program?

Dr. GALLER. Yes, ma'am.

Mrs. HANSEN. This has resulted in some of the most creative and on-the-spot responses that have been made.

Dr. GALLER. Yes, ma'am.

Mrs. HANSEN. The response to the Santa Barbara oil spill was immediate.

Dr. RIPLEY. Yes. We were fustest wth the mostest.

Mrs. HANSEN. That is right.

Dr. RIPLEY. As I mentioned this morning, Madam Chairman, this information is an extension of what Joseph Henry wanted the Federal Government bureaus to begin doing when they started the Weather Bureau, and it is this kind of instant reporting of these natural events which allows scientists to get on to the spot the quickest with the mostest and make the observations.

Mrs. HANSEN. Please insert in the record how you participate in the short-lived phenomena events.

Mr. RIPLEY. Very well.

(The information follows:)

During 1969 the Center alerted dozens of Government agencies, laboratories, and individual scientists by telegram, telephone, and event notification card of numerous events that occurred in the United States and affected the environment. These events ranged from man-made environmental pollution to potentially disastrous earthquakes and storm surges. A representative list of environmental events that the Center reported this past year includes the Santa Barbara oil spill, one of the 17 major oil spills reported by the Center; the Lake Michigan high DDT residue discovery; Mount Ranier seismic activity; the Charles River fish kill, Boston; the sooty tern hatch failure, Florida; the Eastern United States high air pollution potential; the California channel earthquakes; the Miami snail infestation; the Raleigh Bay bird bill, North Carolina; the Lake Michigan alewife mortality; and the Hawaiian Islands storm surge.

Center participation in events included contact with event areas, obtaining information and data on the events, interviewing reliable witnesses in event areas, collecting documentation, issuing event information reports and telegrams continuing event status reports, final event reports, and preliminary results of several field investigations.

Dr. RIPLEY. We are spread out in 122 countries and we have 2,252 correspondents.

BICENTENNIAL OF THE AMERICAN REVOLUTION

Mrs. HANSEN. \$400,000 is requested for the American Revolution Bicentennial program.

Please give us a complete description of your planned activities in this connection for the 1971 fiscal year.

(The information follows:)

The initial years of the Smithsonian's Bicentennial involvement and participation must establish the foundation for a series of exhibits, publications and activities culminating with a major Institution-wide exhibit in 1976. Fiscal year 1971 activity will emphasize the planning and coordination necessary to draw together the numerous and varied resources of the Smithsonian into a coherent and comprehensive program of operations to take place over the next several years. A separate Bicentennial appropriation will support these activities throughout the Institution.

We will continue to be involved on an increasing scale in advising and assisting local and regional groups in developing their participation. In 1971, we will step up research projects on the origins and impact of the American Revolution on American life and national development. This research must be completed years before 1976 to be reflected in exhibits and publications. We will intensify efforts to locate and arrange to borrow significant objects to round out our own holdings for display in exhibits in Washington and in traveling exhibits.

We will continue to design and produce exhibits that will be opening each year over the next several years, communicating signal events and national achievements of the Revolution period. Many of these exhibits will test new approaches and new techniques that we hope to use on an unprecedented scale in our great Bicentennial exhibit in 1976.

EXPENDITURES ON BICENTENNIAL ACTIVITY

Mrs. HANSEN. Does this represent the total funding the Smithsonian plans to spend on this activity in 1971?

Dr. RIPLEY. Yes, although we shall try to derive the maximum contribution of many of our other programs to the goals of the bicentennial.

Mrs. HANSEN. Please insert in the record, by fiscal year, the total expenditures you have made in this connection to date.

(The information follows:)

Fiscal year 1968	-----	¹ \$75, 000
Fiscal year 1969	-----	² 115, 000
Fiscal year 1970	-----	³ 205, 000

¹ Includes approximately \$41,000 of staff time and other costs in the National Museum of History and Technology and \$34,000 elsewhere mostly by the Office of Exhibits in the planning, design, and preparation of exhibits.

² Includes approximately \$65,000 in the National Museum of History and Technology and \$50,000 elsewhere in the Office of Exhibits and National Portrait Gallery (staff work on the Catalog of American Portraits and the acquisition of portraits).

³ Includes about \$130,000 in the National Museum of History and Technology (research, acquisition of objects, and space and exhibits planning), \$35,000 by the Office of Exhibits in design and production, \$15,000 in fellowships by the Office of Academic Programs, \$25,000 by the National Portrait Gallery.

COORDINATION WITH THE AMERICAN REVOLUTION BICENTENNIAL
COMMISSION

Mrs. HANSEN. To what extent are you coordinating activities with the American Revolution Bicentennial Commission?

Dr. RIPLEY. This is occurring at several levels. Both Dr. Daniel Boorstin, the Director of the National Museum of History and Technology, and I are regular members of that Commission. I am an ex officio member by authorization and Dr. Boorstin is an appointed member. Before he came here, he had already been appointed by both

President Johnson and subsequently reappointed by President Nixon. So we have direct representation on the Commission. We also have one staff man working full time on liaison between the Commission and the Smithsonian.

ENVIRONMENTAL SCIENCES PROGRAM

Mrs. HANSEN. \$600,000 is requested for the environmental sciences program. This is a new venture in 1971. Please give us a complete description of the requirement for this activity, what you plan to do, and why you feel you will not be duplicating activities of other Federal agencies who are rapidly accelerating their activities to protect our environment.

Dr. RIPLEY. Madam Chairman, I had mentioned earlier a number of traditional kinds of research and investigations on the environment which the Smithsonian has engaged in. For instance, I mentioned the long series of investigations on solar radiation which have indicated a substantial and important decline in the amount of such energy reaching the earth. This is not a new activity for the Smithsonian, but an activity to which the Smithsonian should give an increased and more concentrated focus drawing upon the well-established resources that we have been developing for over 100 years. What we are attempting to do is to more effectively apply the essential expertise which we have developed over the years to what are now considered to be questions of extreme national importance, questions aimed at achieving a better understanding on the part of the American public as to exactly the level and rates at which man's environment is changing and what this indicates for the future of Americans and all other peoples.

We see our participation in improving the quality of man's environment as threefold. First, the identification and assessment of the components of man's natural surroundings and of his cultural development. Second, monitoring levels and rates of biological and other changes in order to be better able to predict what the future will look like, and third, education at all levels of public interest.

I have mentioned the kinds of public education activities that the Smithsonian can and should be performing through its public exhibits, its seminars, and its public discussions involving people from all sectors of national life. In order to make a significant contribution in these three areas, the Smithsonian is requesting a special appropriation of \$600,000, not for new starts so to speak, but to continue and strengthen five interrelated kinds of traditional Smithsonian activity. These are activities aimed at integrating and applying our own resources of scientists and historians, of collections documenting man's natural surroundings as well as his cultural development, and of natural land areas that are useful for laboratory purposes. We are requesting funds for field studies and publications aimed at identifying certain critical plants and animals as indicators or benchmarks of environmental change. Four additional biologists are needed to undertake special studies to monitor rates and processes of change. These studies would include the development of ecological models for predicting changes that might occur as a result of natural or man-made adjustments in the environment.

Next we must not overlook the importance of research and study of man's own social and cultural changes and difficulties in a changing and increasingly urbanized environment. We need to strengthen our capability in this area by obtaining funds for a cultural anthropologist and a social historian, for additional fellowship offerings to the best university people, and for a series of seminars to encourage constructive discussions in this important area. It is important that the general public be made increasingly aware of the effects of environmental change.

We are anxious to get our special exhibit hall on the environment under production. We believe that through our exhibits program that we can play an important role in helping to awake America to what has happened and what corrective measures need to be taken. And last, as we have discussed earlier, we are especially concerned that the information on man's natural surroundings which is inherent in the collections and related data that the Smithsonian has been collecting for over 100 years be made of maximum utility to individuals and organizations who must ultimately be responsible for recommending corrective technological and other measures that must be taken to halt, if not reverse, the process of deterioration which we are now facing.

It is in this regard, Madam Chairman, that we believe we are not duplicating activities of other Federal agencies. Instead, it is these agencies who traditionally, but now at an increasing rate, are turning to the Smithsonian because as an organization devoted to science, natural history, and man's cultural and technological development the Smithsonian is without peer in this country. We have the basic knowledge and data and the inherent ability to gather and present this data in ways that applied researchers and national policy decisionmakers need for corrective action.

In summary, I think, Madam Chairman, that the most important and unique contribution that the Institution can offer in the environmental sciences derives from our vast natural history collections and our cadre of systematists. The environmental information that can be derived from our collections through the researchers of our scientific staff will serve as the essential underpinnings for the development of the mission-oriented and applied programs for solving environmental problems.

HIGHER EDUCATION AND RESEARCH TRAINING PROGRAM

Mrs. HANSEN. Justify your request for an increase of \$75,000 for academic programs.

Dr. RIPLEY. The Office of Academic Programs is our coordinating branch for services to educational institutions. Its programs fall into three parts which are described in turn.

In higher education a staff of three persons at a cost of about \$38,000 disseminates information about educational opportunities to every major college and university in the United States, conducts a correspondence in excess of 15,000 pieces per year, and makes all administrative arrangement for the award of stipends (including over \$100,000 each year in contract and gift support). The present level of stipends and allowances budgeted by this office is \$350,000, which has not increased appreciably in the last 3 years. This is the continuing

budget for stipends. Some bureaus, most notably the Smithsonian Astrophysical Observatory, transfer additional sums for administration by the Office of Academic Programs. During this same time period the number of professional staff increased from 250 to 350, and their willingness to accept and supervise students grew even more markedly.

We are asking for an increase of \$40,000, enough to add two post-doctoral stipends (a 10-percent increase), two predoctoral stipends at \$6,000 apiece (a 10-percent increase), and add two cooperative fellowships (an experimental program where universities contribute half of a student's maintenance for 6 to 8 months). It is our belief that funds for higher education are a legitimate and important part of our research effort and that as our research capacity grows we have an obligation to enable universities to send a reasonable fraction of the students they would like to have working along with us.

A second category of expenditure that we call educational services includes an annual symposium and special exhibit, as well as a variety of advisory and information exchange activities (such as the weekly Washington Academic Calendar), supported principally from grants and contracts. Federal expenditures in this category include three administrative and clerical positions at a cost of \$31,000, a fund to support scholars from outside in study visits of short duration at \$5,000 per year, a fund of \$8,000 for seminars in four of our higher education programs, and a fund of \$5,000 to bring visiting lecturers to the Institution. It is proposed to increase these funds by \$5,000 overall, in response to the very considerable number of requests and the demonstrable value gained from expenditures to date. Attendance at Smithsonian lectures is very widely advertised throughout the Washington area and these events serve also to nourish our professional community.

Current administrative expenses for travel, data processing, supplies and equipment total \$17,000. An increase of \$5,000 is necessary to meet program commitments. These funds would also permit two short trips each year by two staff members each to colleges and universities to inform them about student opportunities at the Smithsonian.

ELEMENTARY AND SECONDARY EDUCATION PROGRAM

The third major area of services is the program in elementary and secondary education with 12 positions at a cost of \$113,000. This staff of subject matter specialists, in such fields as anthropology, biology, portraiture, art, and history, design educational experiences either as tours for visiting schoolchildren (which have shown a threefold increase in 2 years) or as "packages" of learning materials to be sent to schools across the Nation. In fiscal year 1968, 26,653 children participated in organized elementary school tours. This number grew to 45,523 in fiscal year 1969, and an estimated 60,000 plus in the current year.

I wish to explain briefly what might be accomplished by adding two positions at a cost of \$15,000 to our elementary school program. In the National Museum of History and Technology our present school tour offerings are 18 per day, serving 2,700 students per week, but only in civil history. This effort requires the services of one staff associate and 10 volunteer docents per day.

There are extensive and unused exhibit areas in the history of science and technology. We are trying to develop a tour about the Industrial Revolution, a topic which is of crucial importance to the citizens of tomorrow. We might also offer:

Energy, to include exhibits on electricity and nuclear energy.

How Science Grew, the history of man's achievements in health and medical science, chemistry, pharmacy, and physics and astronomy.

Man and Manufacturing, to treat tools, light and heavy machinery.

Man and Communications, graphic arts and photography.

These new units provide learning opportunities beyond current offerings in the schools and also increase the Museum's weekly student capacity by 14 tours per day which would accommodate an average of 2,100 additional students per week.

If this potential is to be realized, the Division of Elementary and Secondary Education will require one additional staff associate, knowledgeable in the history of science and technology, to organize themes, prepare docent and teacher guidance materials, and train the volunteer docents who will give the school tours. The attached diagram shows areas not now serving education which we hope to bring into use in this way.

The Institution also strives to prepare education materials, based on its collections and exhibits for the Nation's schools. This effort could be significantly improved if materials could be tested among visiting schoolchildren in our exhibit halls. We propose to employ an audiovisual technician to install experimental sequences of slides and tape recorded commentary in halls used by school tours. Such a program of testing would substantially improve the flow of material from the Smithsonian to the schools.

OFFICE OF THE TREASURER

Mrs. HANSEN. Justify your increase of \$60,000 for administrative and central support activities for the Office of the Treasurer.

Dr. RIPLEY. The Office of the Treasurer provides analytical and technical support, such as planning, budgeting, accounting, and auditing, in financial management matters to the entire Smithsonian Institution. An increased volume of work, additional reports that are required both for proper internal information and for outside agencies, necessitates us to request a small staff increase. We need an additional fiscal technician in the Accounting Division in order to properly provide information to and obtain information from the accounting records maintained in our computer processing system. We also need a clerk-typist for the Office of the Treasurer and the Internal Audit Office. This constitutes \$14,000 of the total request. We also need approximately \$46,000 for a number of things which might more properly be described as institutional support services. These include funds for reimbursement to the Workmen's Compensation Fund, increase in the reimbursement to the Post Office Department for an increased volume in public inquiries and other mail, and for computer services required for preparation of the Smithsonian payroll and fund accounting.

HEALTH UNIT

Mrs. HANSEN. Give us the details on the requirement for \$10,000 to establish a health unit for the buildings on the south side of the Mall.

Dr. RIPLEY. Madam Chairman, we now have two small health units in operation, one in the Natural History Building and one in the History and Technology Building. These are already insufficient to meet the emergency needs of employees and the many visitors to the Smithsonian. We are particularly deficient in serving those visitors on the south side of the Mall, where there are strong public attractions such as the lunar rock sample. We believe it is essential to establish a health unit in the Arts and Industries Building and are requesting one position and \$10,000 for this purpose.

INFORMATION SYSTEMS DIVISION

Mrs. HANSEN. Justify your request for an increase of \$100,000 for the Information Systems Division.

Dr. RIPLEY. Madam Chairman, I am pleased to be able to reemphasize what we believe is a really critical need in order to enable the Smithsonian Institution to do a proper job of diffusing the knowledge that we have acquired at a substantial investment over a long period of time. The Smithsonian, because of its stewardship of the National Collections and closely related archives and reference documents, possesses an unmatched assembly of materials which trace man's physical, cultural, and technological development and his natural surroundings. We are convinced that the information in these collections can play a very important role in helping other investigators and other agencies at all levels of Government and private interest to find solutions to present day cultural and biological problems. This information is not now readily accessible because of its huge volume, its wide variety of subject matter, and different methods of documenting and filing used over a 125-year period. Five years ago the Smithsonian realized that we had to explore more modern data automation methods in order to make our collections and research data more accessible and thereby more useful. Not only were we unable to answer questions that were brought to us, but we knew, and know, that many important questions are not even brought to the Institution because the prospective questioners know of the great difficulty, if not hopelessness, of trying to pull together related bits of important information into a coherent and comprehensive response.

We have made some progress in trying to improve our abilities. For instance, a pilot project in the National Museum of Natural History; funds for this project will no longer be available at the end of June 1970. But it is not just the National Museum of Natural History which requires improved information systems. Almost every one of our activities has proposed important applications for the 20th century handling. We have the computer capacity to handle more data, but we need additional systems analysts and computer programmers to design, develop, test, and install specific systems. Our request is for four such employees with funds for travel to investigate applications, computer time, and related services.

SMITHSONIAN INSTITUTION LIBRARIES

Mrs. HANSEN. What is the need for the additional \$150,000 for Smithsonian Institution libraries.

Dr. RIPLEY. The Smithsonian Institution's library program has the following basic purposes: to have at hand carefully selected documentary materials containing the best and most pertinent data and research results from the fine research done elsewhere that has a direct bearing on our own research and educational programs, and to arrange and index the information in ways that make it readily accessible. It is logical and prudent to have an information capability such as this as an adjunct to our research effort. In this manner, Madam Chairman, we speed up our own research activity and make it more efficient by avoiding costly and unnecessary duplication of research.

The Smithsonian Institution libraries do not expect to be entirely self-sufficient. Whenever the kind of information we require, or the nature of our use of the materials in which it is transmitted, permits, we borrow books from other libraries, and ask other information services and reference libraries to help us gain access to information. We, in turn, offer the same services to other libraries.

Although the Smithsonian will continue to use the resources of other libraries through interlibrary loans and other ways, the availability of adequate in-house library materials and reference services is essential to the effective performance of the Institution's curation, exhibition, and research functions. We now find with increasing frequency that materials we want in other libraries are already in use and thus unavailable, or in such great demand that they cannot be used by our researchers for as long as they need them. Competition among libraries for too few copies of books in great demand impedes efficient research. In other words, too frequently, it is more costly to buy too few books than to provide a modest amount of necessary duplication of titles. In a number of such areas the Institution is looked to by others as the principal, if not the only, source of books and information. This relieves other Federal libraries of the responsibility for developing information capabilities in topics that are of relatively limited, though perhaps momentarily vital, concern to them.

The request for fiscal year 1971 is meant to partially correct several deficiencies. An increase in purchase funds of \$52,000 is needed to permit purchasing only an average of three books and four journals a year for each professional employee. Only about \$50,000 are now available. An additional \$15,000 are needed for binding to preserve valuable books; \$15,000 are now available, but \$50,000 a year are needed. A manager for the very important exchange program and three cataloger-index technicians are required, \$39,000. Two additional technicians, \$10,000, are required to cope with a steadily rising volume of reference questions—some 70,000 questions were posed to the library by staff and outsiders in 1969. An additional \$15,000 are needed to pay for computer services to streamline the libraries' operations. And lastly, a librarian and a technician, \$19,000, are required to take care of a growing collection of rare and valuable books, many acquired by gift. This is a total requested increase of \$150,000.

SMITHSONIAN INSTITUTION PRESS

Mrs. HANSEN. An additional \$75,000 is requested for the Smithsonian Institution Press. What is your justification.

Dr. RIPLEY. The activities of our press, Madam Chairman, are basically a natural and logical extension of much of the program work that goes on in the Institution; that is our basic research, the acquisition of collections, and public education through exhibits. In effect, then, through our publication efforts we are able to bring much of this work to a larger audience that would not be served if the information on these activities were restricted to those people who could come to Washington and visit our scholarly staff and our collections and exhibits.

The press prepares, prints, and distributes three basic kinds of publications which are used by this larger audience, the general public, students, and specialists around the world. These publications are collection catalogs, exhibition catalogs, and research studies in the fields of art, history, and science. Additional museums and galleries, new collections such as the Hirshhorn collection, the Lilly coins, and space artifacts, and improved research productivity have dramatically increased the number of important manuscripts and created printing backlogs. Deliberate efforts by the press to cut costs by revised procedures and the use of new printing techniques have helped to stretch printing funds, but these economies have been offset by higher printing costs and a rising volume of work. We are requesting an increase of \$63,000 in printing funds. In addition, the editorial and design staff of the press requires a clerk-typist and an indexer to assist them with what are relatively low-level clerical and production duties.

PHOTOGRAPHIC SERVICES DIVISION

Mrs. HANSEN. Justify your request for an additional \$25,000 for the Photographic Services Division.

Dr. RIPLEY. The Smithsonian has been traditionally concerned with visual education and as such the work of our photographic laboratories is an integral part of our publication and exhibit activities, and of our ability to respond to public requests for photographs of objects in our collections; for instance, the Star Spangled Banner, the Spirit of St. Louis, and John Glenn's space capsule.

This division has not had a significant funding increase in several years despite the rising costs of goods and services, and has not had a staff increase in 5 years despite a growing workload. We are requesting two laboratory technicians at \$10,000 to relieve the photographers of routine duties amounting to about 17 hours a day. Funds in the amount of \$15,000 are needed to purchase specialized commercial services which the laboratories are not equipped to perform, and for supplies, repairs, and the purchase of replacement equipment for 10-year-old items.

BUILDINGS MANAGEMENT DEPARTMENT

Mrs. HANSEN. An increase of \$327,000 is requested for the Buildings Management Department. Give us the details on this requirement.

Dr. RIPLEY. Madam Chairman, our request for the Buildings Management Department is a very selective one aimed at meeting known needs of additional building spaces and closely related service costs. We are asking for 20 additional positions and \$180,000 to provide an adequate staffing level for the Renwick Gallery of Art which is planned for a partial public opening in midfiscal year 1971. These positions include 12 guards for around-the-clock protection, five specialists to operate, maintain, and repair refrigeration and other equipment in that building, and an electrician, a painter, and a carpenter for day-to-day maintenance and repairs. Included in this dollar amount are funds for utilities, communications, security and fire detection systems, and custodial and maintenance supplies and equipment required in the building.

The balance of our request, \$147,000, is to meet the higher costs of utilities, communications, and the repair and maintenance of mechanical equipment for some 3 million square feet of space in eight major buildings and nine other facilities serving some 12 million visitors a year. Costs of these services have increased some 50 percent over the last 5 years from \$1 million to \$1.5 million based on higher unit costs and more consumption. For instance, we have just been informed of a 5-percent surcharge on our electricity bill. Included in the request for \$65,000 for electricity based in part on the air-conditioning needs of the renovated Smithsonian Building; \$20,000 for communications as estimated by the General Services Administration for the Federal Telecommunications System; \$43,000 for steam; and \$19,000 for contract maintenance of a wide range of security and fire detection systems and some 50 elevators and escalators.

DIVISION OF PERFORMING ARTS

Mrs. HANSEN. You are requesting an increase of \$50,000 for the Division of Performing Arts. Last year the distinguished gentleman from Connecticut and myself discussed with you the commitments that you might make with Actors Equity or other groups representing professional actors. What has happened on that?

Dr. RIPLEY. As a result of the difficulties of trying to meet the increased salaries and requests that were involved in the Equity negotiation, we decided to discontinue the Summer Theatre Festival. We are continuing with the American Folklife Festival and we are continuing with the American College Drama Festival for this one more year, with the possible predication that we may not be able to afford it next year because of actual financial loss.

Mrs. HANSEN. Will the Kennedy Center be able to house the Collegiate Festival next year?

Mr. WARNER. I don't think they will be, Madam Chairman, not by next year; no. This year we are employing Ford's Theatre, as we did last year, and a brand new theater at George Washington University, not the Lisner. It is a new smaller 450-seat theater, called the University Center Theater. That is where the college drama festival will be this year. We lost a bit on the tent last year in spite of the generous donation from Pepsi Cola because of the costs of erecting the tent and getting it down, and the subsequent season we had of American musicals not connected with the college drama festival. We lost rather heavily on our private role side and we are not engaging in any summer musical comedy or theater festivals this year.

Mrs. HANSEN. This coming season you will only have the folk festival and the college drama festival?

Mr. WARNER. Yes; Madam Chairman.

Dr. RIPLEY. And some small events, the puppet theaters and things of this sort.

Mrs. HANSEN. Are those largely events for children?

Dr. RIPLEY. Yes.

Mrs. HANSEN. Very good.

Dr. RIPLEY. Of course, the folk festival has been an enormous success.

PUPPET THEATER

Mrs. HANSEN. It has been a tremendous success. Your College Drama Festival also has been a great success.

Dr. RIPLEY. Oh, that was great.

Mrs. HANSEN. I attended one at Ford's Theatre and it was excellent. It was as good as any professional theater I have ever seen.

Mr. WARNER. This year, Madam Chairman, one of the universities, Los Angeles City College, has a play, an original work called "A Gap in the Generations," which attempts to explain through music, dance, and drama why we have these difficulties in communicating with the younger generation, or so it says in the press release.

Mrs. HANSEN. Is Howard University also participating this year?

Mr. WARNER. Yes; two area universities have made the final selections this year, both Howard and Georgetown.

MUSEUM PROGRAMS AND RELATED RESEARCH

Mrs. HANSEN. Please insert pages C-1 through C-30 of the justifications in the record.

(The information follows:)

SMITHSONIAN INSTITUTION
MUSEUM PROGRAMS AND RELATED RESEARCH
(SPECIAL FOREIGN CURRENCY PROGRAM)

1969 Appropriation	\$2, 316, 000
1970 Appropriation	2, 316, 000
1971 Estimate	4, 500, 000

An appropriation of \$4, 500, 000 in foreign currencies which are determined by the Treasury Department to be excess to the needs of the United States is requested for a program of grants to United States institutions for essential field research in archeology and related disciplines, systematic and environmental biology and astrophysics, as well as for museum programs and for other Smithsonian interests.

The requested increase of \$2, 184, 000 in foreign currencies is to be devoted to strengthening the research programs of United States universities, museums, and other institutions of higher learning in those countries where the United States holds excess currencies. The increase is essential particularly to support urgent field studies in the Smithsonian's traditional fields of systematic and environmental biology and anthropology which today are recognized as basic to an understanding of the immediate national and world problems of environmental quality and cultural change. The increase is essential also to support on-going and new research, some long in preparation, which contributes to United States national programs under, for example, the International Biological Program, the Intergovernmental Oceanographic Commission of UNESCO, the National Aeronautics and Space Administration, and the United States National Museum.

Funds are requested for the following programs:

	<u>FY 1969</u> <u>Appropriation</u>	<u>FY 1970</u> <u>Appropriation</u>	<u>FY 1971</u> <u>Estimate</u>
Archeology and Related Disciplines.....	\$1, 120, 000	\$1, 105, 000	\$1, 500, 000
Systematic and Environmental Biology.....	1, 046, 000	1, 046, 000	1, 800, 000
International Biological Program.....	500, 000
Museum Programs.....	40, 000	40, 000	100, 000
Astrophysics.....	95, 000	105, 000	570, 000
Grants Administration.....	<u>15, 000</u>	<u>20, 000</u>	<u>30, 000</u>
Total.....	\$2, 316, 000	\$2, 316, 000	\$4, 500, 000

IN FISCAL YEAR 1970, NO FUNDS FOR NEW RESEARCH

During fiscal year 1970 funds, including all previous appropriations, were sufficient only to cover the cost of on-going research; there were no funds for new research. Program activity has steadily increased from nine grants

during the first fiscal year, 1966, to 140 at the end of fiscal year 1969, up from 100 at the end of the previous year. New inquiries about foreign currency uses continue to average one a day. Such growing foreign currency activity reflects both the scientists' search for alternatives to declining federal research dollars and an expanding Smithsonian Special Foreign Currency Program authority. Because there are no funds for new research, many worthy projects long in preparation and now being formally submitted for funding, cannot be supported and may be abandoned as participating scholars, always under pressure to publish, seek other research opportunities. It is estimated, therefore, that a realistic level of appropriation for the Smithsonian Foreign Currency Program in future years would be \$6,000,000.

USE OF FOREIGN CURRENCIES SAVES HARD DOLLARS

Special Foreign Currency Program appropriations are an advantageous source of research monies both because they are not new appropriations of tax dollars and because delay in the use of the "excess" accounts means continuing losses to the United States Treasury as these accounts lose value through inflation and devaluation. Moreover, these appropriations do not add appreciably to the President's budget total because the Commodity Credit Corporation reduces its appropriation request by an amount equal to the amount of foreign currencies expended.

At the same time, Special Foreign Currency Program appropriations contribute to essential national research objectives abroad without contributing to a balance of payments deficit. Moreover, Smithsonian Foreign Currency Grants frequently serve as dollar-saving supplements to the dollar grants of both public and private agencies like the National Science Foundation, the National Institutes of Health, The World Wildlife Fund, the John D. Rockefeller III Fund and the Wenner-Gren Foundation. In such cases, the foreign currency grants cover costs in the host country; the dollar grants are expended in the United States for equipment not available in "excess" currency countries, for American salaries, laboratory fees and the like.

FOREIGN CURRENCIES SERVE NATIONAL PROGRAMS ON ENVIRONMENTAL QUALITY

Now is the time to use foreign currencies for urgent field studies of the processes of change in man's natural environment and in his culture. The impact of technology on rural and urban communities, the poisoning of man's environment and the destruction of nature's productive mechanisms in the face of exploding human populations, are all problems of direct interest to the Smithsonian. Unrest in urban centers and among young people the world over attest to our poor understanding of these processes. Although the Smithsonian adheres to its traditional role as an institution for basic, not applied, research, its traditional biological and anthropological interests are basic to an understanding of these immediate national and world problems.

"Excess" foreign currencies represent a substantial national resource which should be fully utilized to support studies of environmental quality like the following on-going projects:

... International Biological Program/Smithsonian studies in Tunisia of the continuing encroachment of the Sahara in the face of concerted conservation programs.

... Yale University/Smithsonian field research in the Gir Forest in North-west India where agricultural pressures threaten destruction of the forest which is the last habitat of the Asiatic lion, which once roamed the region from the Mediterranean to the South China Sea.

... Union College, New York, research into the deterioration of fresh water lakes in the Nile River delta as a result of the regulation of the river's flow by the Aswan Dam. The lakes have provided fish and employment for fishing communities for centuries.

... Smithsonian studies, together with Israeli scientists, of the movement of marine organisms through the man-made, sea-level Suez Canal. Results show that the majority of commercially valuable fish taken in the Eastern Mediterranean originated in the Red Sea. These studies have saved the United States thousands of hard research dollars because they provide a tested model for studies to be conducted in connection with a possible sea-level canal at Panama.

... University of Georgia studies of the tropical forests, grasslands, and cultivated lands in the Ganges river valley in India.

... Smithsonian studies of migrating birds and the parasites associated with these migrating birds, in Northeast Africa, which have shown that they carry viruses and antibodies and thus can be considered potential carriers of human diseases.

On-going studies of cultural change supported by the Smithsonian Foreign Currency Program include:

... Duke University, Durham, North Carolina, studies of the effects of city life in New Delhi, India, on in-migrating minorities.

... University of Pennsylvania studies of the effects of urbanization on family life in India.

... University of Illinois studies of the effects of migration on basic cultural expression, specifically the traditional songs of communities of Jews migrating to Israel.

... University of Washington studies of the effects of spreading technology and urbanization on one of Ceylon's oldest ethnic groups.

... Center for the Study of Man, National Museum of Natural History, urgent anthropological studies of cultures changing rapidly or disappearing under the impact of modern technology.

Such studies by American scholars of man's behavior are best conducted abroad because, as a rule, the best observers of a living culture are those drawn from a different culture.

RESEARCH WHICH MUST BE POSTPONED

New research into the nature of the environment long in preparation which must be postponed because of insufficient funds in the Smithsonian Fiscal Year 1970 appropriation include:

... International Decade of Oceanography studies conducted aboard the Smithsonian research vessel PHYKOS by scientists from major American oceanographic research institutions as a part of the approved United States national contribution to the Cooperative Investigations of the Mediterranean of the Intergovernmental Oceanographic Commission.

... Dartmouth College studies of organic production in Kashmir lakes, a joint U.S. -Indian project, which is a part of the International Biological Program's world-wide inventory of natural productivity.

... Duke University studies of the systematics of lichens in Morocco. The first of a series of projects to study in a comprehensive manner the flora of this new "excess" currency country.

... Oak Ridge National Laboratory studies of deciduous forest and grassland ecosystems in Poland which will supplement similar studies under Oak Ridge's direction under the United States national plan for the International Biological Program.

... University of Texas archeological studies of the classical city of Stobi in Macedonia, Yugoslavia which will seek to reconstruct the history, social organization and the natural environment of this ancient city over the full span of its existence.

Other studies which must be postponed for lack of sufficient funds include:

... American Schools of Oriental Research excavations at Kirbet Shema, Israel which will apply to the Greek, Roman and Byzantine periods of the archeology of Palestine the highly refined techniques pioneered in the study of earlier periods in that country.

... Smithsonian Astrophysical Observatory studies of the Earth's upper atmosphere and magnetic field by means of newly-developed laser tracking techniques, at the Uttar Pradesh State Observatory in India, of man-made satellites.

ACCOMPLISHMENTS

Smithsonian Foreign Currency Program grants have benefitted more than 200 United States institutions in over 25 states. Accomplishments include:

... More than 43 research publications. Recent publications include the first systematic study of marine organisms sorted and distributed by the Smithsonian's Mediterranean Marine Sorting Center in Tunisia and an ecological analysis of the climate and vegetation of Ceylon growing out of the studies of the Ceylonese elephant undertaken by the National Zoological Park.

... More than 150 post-doctoral research opportunities for Americans.

... More than 110 training opportunities for American Ph. D candidates, who obtained essential field experience, frequently obtaining course credit, and more often accomplishing the independent research for doctoral dissertations. Especially noteworthy for the training of students have been Hebrew Union College, Cincinnati, Ohio in its summer seminar at the excavation of the biblical city

of Gezer in Israel; New York University's Institute of Fine Arts in the course of excavations of the ancient Egyptian city of Mendes in the Nile River delta; and the American Institute of Indian Studies (a consortium of 23 American universities), whose junior fellows conduct research in India toward their doctor's degrees with Smithsonian support. Most research projects include at least one American and one host country senior research scholar and one American and one host-country graduate student.

... Additions to research collections of the National Museum of Natural History and of other grantee institutions in the form of archeological, ethnographic and biological specimens collected and shared with the collaborating institutions in the "excess" foreign currency country. For example, Yale University's Peabody Museum and the Museum of the University of Colorado have benefitted from additions to their paleontological collections growing out of expeditions in Egypt and Tunisia respectively. The Yale expedition is making substantial contributions to our understanding of man's evolution; the Colorado expedition has uncovered important information about the environment of early man and the geological history of northwest Africa.

GROWING RESEARCH OPPORTUNITIES

Opportunities continue to grow to employ foreign currencies. In June 1969 an amendment was signed to the principles of cooperation between the Smithsonian and the Government of Yugoslavia permitting collaboration in ecological research there. Moreover, recent political developments in Eastern Europe have added to the program's authority opening up a range of "excess" currency uses covered by the National Museum Act of 1966.

Moreover, the change in government in Pakistan has brought increased interest in collaboration in basic research under the Smithsonian program. A University of Washington proposal to study the wild boar of Pakistan and a Smithsonian proposal to study the marine fauna of the continental shelf of West Pakistan are currently under consideration by the Government of Pakistan as pilot projects for a potentially extensive program. In India, the Smithsonian joined with the long-established American Institute of Indian Studies to provide facilitative services to American institutions in the development of projects there.

Direct dollar costs to the Smithsonian for its Foreign Currency Program are limited to those for administrative personnel in Washington. During Fiscal Year 1970, six people were employed by the Office of International Activities for this purpose at a total cost of about \$87,000. The administrative burden has grown by some forty grants, for each of the last two years, without any increase in personnel. The increase in activity has been made possible by the simplification of procedures and the introduction of labor-saving equipment.

This Special Foreign Currency Program request, as in the past, is based on budget projections for on-going research and on pending and new research proposals which include firm research proposals, postponed do to lack of sufficient funds, and other sample or illustrative proposals based on firm indications of interest both within and without the Smithsonian. They represent the Institution's selection of possible projects which appear most promising for successful development and implementation during Fiscal Year 1971. It should be noted, however, that actual implementation of these projects will be contingent upon three factors: review by the Smithsonian's national scientific advisory councils, review and approval by American embassies overseas, and appropriate cooperative arrangements with host-country institutions or Governmental authorities.

MUSEUM PROGRAMS AND RELATED RESEARCH
(SPECIAL FOREIGN CURRENCY PROGRAM)

1. Archeology and Related Disciplines

A. On-going Projects

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>	
1. American Institute of Indian Studies (a non-profit organization of 24 American colleges and universities)	For continued support of the Center for Art and Archeology (formerly the American Academy of Benares), a research center for South Asian archeology and art history.	1971est.	100,000
		1970	150,000
		1969	147,000
		1968	144,753
		1967	130,778
		1966	76,850
2. American Research Center in Egypt (a nonprofit study center supported by ten American universities)	To continue support of the Center's research and excavation program in the archeology of Egypt, which includes Pharaonic, Hellenistic, Roman, and early Christian sites.	1971est.	50,000
		1970est.	150,000
		1969	150,000
		1968	258,728
		1967	177,137
		1966	259,200
3. Jerusalem School of Archeology of the Hebrew Union College	To continue the survey and exploration of some 400 archeological sites in the Negev and to conduct seminars in biblical archeology for American graduate students in archeology.	1971est.	50,000
		1970est.	174,000
		1969	68,500
		1968	134,250
		1967	165,750
		1966	150,000
4. Peabody Museum of Yale University	To continue the paleontology and stratigraphy studies of the Paleocene, Eocene, and Oligocene deposits of Egypt, which have resulted in important discoveries relating to human evolution.	1971est.	20,000
		1970est.	30,000
		1969	30,000
		1967	31,396
		1966	19,310
5. University Museum, University of Pennsylvania	To study remaining stones of the Temple of Akhnaten at Luxor, Egypt.	1971est.	20,000
		1970	67,000
		1969	60,000
		1968	9,730
		1967	65,070
6. University of Arizona and Museum of Anthropology, University of Michigan	To support a program for research and training in prehistoric archeology through field excavations on Mt. Carmel in Israel.	1971est.	30,000
		1970	56,000
		1969	50,000
		1968	47,660
		1967	50,000

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>	
7. Carnegie Museum	To continue the excavation of a Philistine City at Ashdod, Israel.	1971est.	10,000
		1970	31,000
		1969	50,000
		1968	56,180
		1967	47,180
		1966	50,000
8. Lawrence Radiation Lab. University of California, Berkeley	To continue testing the utilization of cosmic rays to "x-ray" the Egyptian pyramids in search of presently unknown chambers.	1971est.	10,000
		1969	32,000
		1967	21,680
		1966	23,320
9. University of Missouri	To excavate at Tell Anafa, Israel, to understand better the nature of Greek trade with Palestine and Egypt in the period after 800 B. C.	1971est.	25,000
		1970est.	35,000
		1969	40,000
		1968	60,500
10. University of Minnesota	To continue a program of research in Yugoslavia with excavations of the unique Roman Palace of Diocletian at Split, Yugoslavia.	1971est.	40,000
		1970	80,000
		1969	27,000
		1968	32,505
11. Smithsonian Institution Office of Anthropology	To study disappearing metal-working crafts of Pakistan and Ceylon as part of a worldwide study of ancient technologies and their development.	1971est	30,000
		1970	58,000
		1969	43,700
		1968	21,128
12. Brooklyn Museum	To construct scale models of Egyptian monuments and archeological sites for study.	1971est.	8,000
		1970	18,000
		1967	4,222
13. Institute for Advanced Study, Princeton	To conduct interdisciplinary research and excavations in Bronze and early Iron Ages of Northern Yugoslavia.	1971est.	10,000
		1970	14,600
		1969	8,000
		1968	9,496
		1967	2,030
14. University of Chicago	To provide research assistantships for graduate credit in South Asian art at the American Academy of Benares, India, an affiliate of the American Institute of Indian Studies.	1971est.	10,000
		1970	10,000
		1969	10,000
		1967	11,400
15. University of Chicago	To examine a Vaisnava Religious community in West Bengal historically and sociologically. (Funds available in 1967, awaiting Government of India approval)	1971est.	15,000

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>	
16. American University in Cairo	To study the distinctive domed Mausolea of the Mamluk era (1250-1517 A. D.) in Cairo which have not been studied and are threatened by growth and modernization of Cairo.	1971est. 1969 1968	10,000 9,700 6,340
17. Dumbarton Oaks (Harvard) Center of Byzantine Studies; American Academy in Rome	To continue studies of the unique but rapidly disintegrating Roman and Byzantine mosaics at historic Utica, Tunisia.	1971est. 1970 1969	30,000 62,000 28,628
18. Smithsonian Institution Center for the Study of Man	To continue development of urgent anthropological research in the ex- cess countries as a part of the Re- search Program in Changing Cultures of the newly established Center for the Study of Man.	1971est. 1970est. 1969	15,000 20,000 20,000
19. University of Washington	To continue studies of the relation- ship between social structure and economic organization in the Vedda Communities of Ceylon.	1971est. 1970est. 1969 1968	15,000 20,000 19,000 16,000
20. University of Illinois	To continue comparative studies of the effects of cultural change on folk music in Israel and Tunisia.	1971est. 1970	22,000 31,500
21. Denison University	To continue the exchanges of materials on Ancient Burmese art with Burmese museums.	1971est. 1970est. 1969	2,000 2,000 5,000
22. American Institute of Indian Studies	To continue support for post- doctoral research in social and cultural anthropology and lin- guistics of India and Ceylon and to support the Institute's center in Poona, India as an American research center abroad serving American scholars in all fields.	1971est. 1970 1969	90,000 201,000 148,000
23. American Schools of Oriental Research, Boston, Mass. (a consortium of 5 United States institu- tions of higher learning	To continue support for two archeo- logical excavations at Tell el Hesi and Kirbet Shema embracing biblical, Greek, Roman and Byzantine periods.	1971est. 1970est 1969	50,000 100,000 50,000

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>	
24. University of Michigan	To continue excavations of the earliest Neolithic settlements in Poland.	1971est. 1969	20,000 37,000
25. Denison University	To continue excavations at Sirmium a Roman provincial capital along the fortifications erected against the "barbarious!"	1971est. 1970est. 1969 1968	30,000 60,000 3,000 34,000
26. Brooklyn College of the University of the City of New York	To continue reevaluation of the landmark excavations at the pre-historic site of Starcevo, Yugoslavia; apply modern ecological techniques to a site originally excavated in the early 1930's.	1971est. 1970	10,000 10,000
27. Office of Anthropology Smithsonian Institution	To continue to study the impact on the culture of Palestine of the Phoenician, Cypriot, Egyptian and Arabian cultures from the Middle Bronze age through the Persian period through excavations at Tell Jemmeh in Southern Israel.	1971est. 1970	30,000 66,500
28. University Museum University of Pennsylvania	To continue study of Dra Abul El Naga tomb inscriptions, Egypt.	1971est. 1970est. 1969	20,000 17,000 17,300
29. Douglass College Rutgers University	To continue excavations of the early Greek and Roman settlements at Salona in Yugoslavia.	1971est. 1970 1969	40,000 40,000 20,300
30. University of California Los Angeles	To continue excavations of an early neolithic settlement at Anzibegovo Macedonia, Yugoslavia considered a cross road for formative cultures of western civilization.	1971est. 1969	80,000 80,000
31. University of Minnesota	To continue studies of climate influences on man's shift from nomadic to settled life in the Middle East through studies of fossil evidence of evolving flora and fauna.	1971est. 1969	7,000 7,700
<u>Subtotal Estimate for On-going Research</u>			899,000

B. Pending Research Proposals

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
1. University Museum University of Pennsylvania	To excavate the protohistoric of Kantarodai Ceylon to determine the nature and chronology of settlement and relations with south India.	1971 est.	40,000
2. Smithsonian Institution Office of Anthropology	To study the rapidly disappearing crafts at village level in India.	1971 est.	50,000
3. American Institute of Indian Studies, Center for Art and Archeology	To survey and initiate excavation of Cultural Sites of the Pratihara period especially at Bhinmal in Rajasthan, India.	1971 est.	30,000
4. Smithsonian Institution Museum of Natural History	To survey and document the art history of Tibet on the basis of objects currently being brought to India and Nepal by Tibetan refugees.	1971 est.	20,000
5. New York University Columbia University University of Michigan	To excavate ancient Utica, Tunisia employing interdisciplinary techniques designed to describe fully the mode of life and environment characteristic of successive cultures inhabiting the site.	1971 est.	30,000
6. American Museum of Natural History	To initiate archeological excavations together with the Archeological Survey of India with special provision for the training of Americans in the archeology of South Asia, today an area largely neglected by U. S. scholarship.	1971 est.	30,000
7. Smithsonian Institution Office of Anthropology	To initiate systematic collections of Indian folk art which is disappearing as village crafts yield to urban technology.	1971 est.	26,000
8. University of California Los Angeles	To excavate Islamic archeological sites in West Pakistan.	1971 est.	30,000
9. Brandeis University	To survey western Phoenician archeological sites in Morocco.	1971 est.	15,000
10. University of Michigan	To conduct research and excavations into the Middle Paleolithic of Northern Bosnia.	1970 est.	20,000

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
11. Institute for Advanced Studies, Stanford University	To conduct investigations in the archeology of historical India.	1970est.	20,000
12. Columbia University; University of Pennsylvania	To conduct ethno-historical research into the history of Traits of traditional life in Modern India.	1970est.	20,000
13. University of Washington	To conduct investigations into the chalcolithic and early civilization of India.	1970est.	40,000
14. Southern Illinois University	To study the impact of rural road construction on social, cultural and economic change in Yugoslavia.	1971est.	28,000
15. University of Michigan	To document photographically the architecture, sculpture and paintings of the Bhuddhists, Hindus and Jains during India's "Golden Age" from the fifth to the eight century A. D.	1971est.	16,000
16. University of Wisconsin	To study Indian religious experiences and attitudes expressed through the structure of Hindu rites of death.	1971est.	12,000
<u>Subtotal Estimate for Pending Research</u>			327,000

C. New Projects

1. Pennsylvania State University	To explore the significance to ancient Egyptian societies of the stars in the alignment of the temples at Luxor in Egypt through application of new techniques of aerial photography and computer calculation of the positions of stars in ancient times.	1971est.	13,000
2. University of Texas	To excavate the classical site of Stobi in Macedonia, Yugoslavia which lies at the confluence of Greek, Roman and ancient Balkan cultures.	1971est.	31,000

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
3. Dumbarton Oaks Harvard University	To excavate the Byzantine provincial capital of Bargala in Macedonia which lies at the confluence of Greek, Roman and ancient Balkan cultures in a study supplementary to excavations at Stobi and at Anzabegovo covering earlier periods.	1971est.	30,000
4. University of Hawaii	To initiate prehistoric archeological excavations in the northeastern India.	1971est.	30,000
5. Washington State University	To excavate a prehistoric flint mining complex work of the Kanienm River in Poland.	1971est.	25,000
6. Washington State University	To study pre-mesolithic fossils in Poland.	1971est.	10,000
7. American Museum of Natural History, New York	To conduct museum studies in Egypt of unpublished materials from Egyptian tombs of the Middle Kingdom.	1971est.	20,000
8. University of Nevada	To excavate the prehistoric site of Kausambi in northern India.	1971est.	30,000
9. University of Washington	To study the relations of fishing boat crew members and how they relate to conflict groups in a peasant fishing town in Yugoslavia.		
10. Ohio State University	To excavate the Yugoslav city of Naissus which has an uninterrupted history from the early Neolithic period to the late Middle Ages reaching its peak in the Roman period.	1971est.	35,000
11. University of Washington	To study the historical and religious documents of Tibet brought to India by the exiled Dalai Lama.	1971est.	30,000
12. Office of Anthropology Smithsonian Institution	To study the physical anthropology of prehistoric peoples in conjunction with archeological excavations of the Polish Academy of Sciences.	1971est.	20,000
<u>Subtotal Estimate for New Research</u>			274,000
<u>Total Archeology and Related Disciplines</u>			1,500,000

II. Systematic and Environmental BiologyA. On-going Projects

<u>Recipient</u>	<u>Projects</u>	<u>Grant Expressed in U. S. Dollars</u>	
1. University of Georgia	To study the flow of energy through small rodent populations in different habitats in conjunction with the Ecological Institute of Poland.	1971est.	20,000
		1970est.	20,000
2. Smithsonian Institution Office of Environmental Studies, Oceanography and Limnology Program	To study marine organisms of the Red Sea and Eastern Mediterranean in order to determine what biological interchange of species has occurred through the Suez Canal.	1971est.	100,000
		1970est.	100,000
		1969	100,000
		1967	122,000
3. Smithsonian Institution Office of Environmental Studies, Oceanography and Limnology Program	To accelerate the processing of marine organisms from the Mediterranean through the sorting facility known as the Mediterranean Marine Sorting Center operated in cooperation with the Tunisian Institute of Oceanography and Fisheries.	1971est.	100,000
		1970est.	100,000
		1969	100,000
		1967	152,360
4. University of Colorado	To continue to excavate a paleontological site in the Miocene-Pliocene formations of South Central Tunisia to attempt to establish a chronology for fossil mammals in Tunisia which may help to determine geological relationships with similar European formations.	1971est.	25,000
		1970est.	25,000
		1969	23,000
		1968	23,165

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>	
5. Smithsonian Institution Division of Birds	To continue investigations on the ecology of Palearctic birds migrating through northeastern Africa, including cooperative research on serology with the Rockefeller Virus Laboratory and ectoparasites with the Naval Medical Research Unit III in Egypt.	1971est.	30,000
		1970est.	50,000
		1969	41,000
		1968	21,517
		1967	44,083
6. University of Michigan	To continue taxonomic studies of Indian mollusks through caryotype analysis and the cytogenetics of closely related species which will contribute to medical, public health, and veterinary programs.	1971est.	15,000
		1970est.	15,000
		1969	16,000
7. Smithsonian Institution National Zoological Park	To continue studies of the evolution and behavior of related primates (Cercopithecidae) in different environments in Ceylon.	1971est.	30,000
		1970	38,000
		1969	21,000
		1968	45,749
8. Smithsonian Institution National Zoological Park	To continue studies of the relation of man and elephant in Ceylon where the domesticated beast of burden is captured and trained to work with man after reaching maturity as a wild elephant, rather than after domestication as a young animal.	1971est.	10,000
		1970	10,000
		1969	10,000
		1968	4,371
9. State University of New York at Stony Brook	To continue theoretical ecological studies of a living coral reef and the organisms related to it in Israel.	1971est.	20,000
		1970est.	20,000
		1969	20,000
		1968	12,036
10. Smithsonian Institution Department of Botany	To continue revision of the basic <u>Trimen's Flora of Ceylon</u> in the light of modern botanical knowledge and techniques.	1971est.	30,000
		1970est.	30,000
		1969	30,000
		1968	39,400
11. Smithsonian Institution Radiation Biology Lab.	To continue studies of solar radiation station in Israel to obtain data for comparison with base line studies conducted in Washington, D. C.	1971est.	80,000
		1970est.	80,000
		1969	84,000
		1967	110,000
12. Smithsonian Institution Office of Oceanography and Limnology Program	To continue studies of the benthic and planktonic biology of the Adriatic Sea in Yugoslavia.	1971est.	35,000
		1970est.	35,000

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>	
13. Smithsonian Institution: National Zoological Park and Museum of Natural History	To provide additional grants to Smithsonian scientists for in- creasing the national entomo- logical, botanical and zoological collections by expeditions to India, Ceylon, Egypt, Pakistan, Tunisia and Morocco.	1971est. 25,000 1970est. 25,000	
14. Smithsonian Institution Department of Vertebrate Zoology	To continue studies, of South Asian birds and the preparation of a handbook.	1971est. 5,000 1970 5,000 1969 5,000 1968 5,000	
15. Dartmouth College	To continue studies of organic production in fresh water lakes in Kashmir, India.	1971est. 40,000 1970est. 47,000	
16. University of Miami, Florida	To continue studies in Ceylon of Carangid fishes which constitute one of the major sources of man's food around the world.	1971est. 15,000 1970est. 15,000 1969 25,000	
17. State University of New York, Stony Brook	To continue studies of the ecology of snails in Israel.	1971est. 10,000 1970est. 20,000 1969 20,000	
18. University of Missouri	To continue studies of the behavior and ecology of gazelles in Israel.	1971est. 35,000 1970 45,000	
19. Library, Smithsonian Institution	To continue accelerated translation and publication of reference works and monographs.	1971est. 50,000 1970 25,000	
20. Department of Invertebrate Zoology Smithsonian Institution	To continue ecological studies of sponge fisheries of Tunisia.	1971est. 10,000 1970est. 10,000 1967 4,600	
21. Office of Vertebrate Zoology, National Museum of Natural History, Smithsonian Institution	To continue to study the geographic distribuion and the ecology of the mammals of Morocco.	1971est. 40,000 1970 63,000	
22. Program of Ocean- ography and Limnology Smithsonian Institution	To continue a survey of Marine algae, fauna and sediments of the continental shelf of Morocco.	1971est. 25,000 1970 25,000	
23. Smithsonian Institution Department of Entomology	To study the Biosystematics of the in- sects of Ceylon as a part of the model program of ecological studies of that tropical island.	1971est. 20,000 1970 28,000	
<u>Subtotal, Estimate for On-going Research</u>			770,000

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
<u>B. Pending Projects</u>			
1. Smithsonian Institution Department of Botany	To initiate flora and vegetation studies of a district of Mysore State in the Ghat Mountains of Southwest India and to prepare collections for the Smithsonian's National Herbarium.	1971est. 1970est.	20,000 20,000
2. University of Georgia	To initiate studies of the interaction of human and small rodent populations in a variety of temperate zone environments in conjunction with the Ecological Institute of the Polish Academy of Sciences.	1971est. 1970est.	25,000 25,000
3. California Academy of Sciences	To initiate field investigations of the habitats of Indian amphibians and reptiles especially in the fast disappearing virgin environments of that country.	1971est. 1970est.	25,000 25,000
4. Duke University	To initiate taxonomic studies in Yugoslavia of the Adriatic isopod and to prepare a handbook for the study around the world of this marine organism.	1971est. 1970est.	20,000 20,000
5. Smithsonian Institution Office of Environmental Studies	To initiate studies of the behavior of elephants and primates in India coordinated with base line studies conducted in Ceylon.	1970est.	50,000
6. Union College, Schenectady, N. Y.	To collect and study the plankton communities of the Nile River Delta with special reference to the changes in salinity and circulation caused by interruption of seasonal river fluctuation by the Aswan Dam.	1970est.	70,000
7. Duke University	To conduct field studies in plant taxonomy and ecology in the state of Assam, India.	1971est.	30,000
8. University of California at Davis	To study the taxonomy and distribution of the poorly known microscopic marine fauna of the Bay of Bengal on the basis of collections of marine sediments from the coastal region of East Pakistan.	1971est.	20,000

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request</u> <u>in U. S. Dollars</u>	
9. Smithsonian Institution Office of Environmental Studies	To study the ecology and behavior of hooved animals in a teak forest in India.	1971est.	20,000
10. Southern Methodist University	To undertake a definitive study of Quaternary age deposits on the floor and lower slopes of the Qattara Depression in the western Desert of Egypt.	1971est.	25,000
11. Smithsonian Institution, Program of Oceanography and Limnology	To collect and conduct taxonomic studies of the marine fauna of West Pakistan's continental shelf.	1971est.	50,000
		1970est.	70,000
12. University of Michigan	To study productivity of tropical lakes in Southern India.	1971est.	21,000
		1970est.	31,000
13. Gulf Coast Marine Lab., Mississippi, and Division of Fishes, National Museum of Natural History, Smithsonian Institution	To conduct systematic and behavioral studies of flatfishes and gobioid fishes in collaboration with the Zoological Survey of India	1971est.	25,000
		1970est.	23,300
14. American University in Cairo	To study in Egypt the migration of marine biota between the Red Sea and the Mediterranean through the Suez Canal.	1971est.	20,000
15. Smithsonian Institution Office of Environmental Studies	To conduct studies of the pattern and behavior of birds during migration in the Himalayan Mountains of Northern India and Nepal.	1971est.	20,000
16. Smithsonian Institution Division of Invertebrate Paleontology	To study in India the broadly distributed fossil ostracod which reveals through its varied physical appearance much about the climate and geography of the geologic era in which it lived.	1971est.	25,000
17. University of Michigan	To study the snail, carrier of the disease, bilharzia, in the newly formed reservoirs and canals associated with the Aswan dam in Egypt.	1971est.	20,000
18. University of Utah	To collect the may flies of Pakistan for taxonomic studies as a part of specialized world wide studies of this species.	1971est.	10,000

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S Dollars</u>	
19. Smithsonian Institution Office of Environmental Studies	To investigate the plant ecology of the Laccadive Islands of India in cooperation with the Botanical Survey of India and to obtain a duplicate set of specimens for the research collections of the U. S. National Museum.	1971est.	30,000
20. Smithsonian Institution Office of Environmental Studies	To collect for the U. S. National Museum and study the flora of the long neglected areas of India particularly the Malabar and the Karomandel Coasts, and the Nilghiri and Khasia Hills--areas which served as sources of materials for classic botanical studies made as long ago as the 17th Century and badly in need of revision.	1971est.	40,000
21. University of Washington	To conduct pilot studies of the behavior and ecology of the wild boar in West Pakistan--a little studied animal which is nevertheless considered a significant agricultural pest.	1971est. 1970est.	30,000 47,000
22. University of Georgia	To study organic productivity and nutrient cycling in tropical ecosystems in collaboration with the Hindu University of Benares, India. This study has been proposed to the National Committees for the International Biological Program of both the United States and India.	1971est. 1970est.	50,000 50,000
<u>Subtotal, Estimate for Pending Research</u>			526,000

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
C. <u>New Projects</u>			
1. University of California Berkeley	To initiate a comprehensive program of the study of the flora of Morocco with bio-systematic studies of flowering plants.	1971est.	3,000
2. Duke University Durham North Carolina	To conduct studies for the classification of Moroccan lichens with special emphasis on their chemical characteristics.	1971est.	3,000
3. California Institute of Technology	To study the microbiology of the desert soils of Morocco.	1971est.	10,000
4. University of Illinois	To compare structure and function in New World bird communities with those in India.	1971est.	10,000
5. Ohio University	To study the pollution condition of Lake Tunis in Tunisia.	1971est.	25,000
6. University of Michigan	To study the effects of inbreeding in mammals in collaboration with the Cancer Research Institute in India.	1971est.	22,000
7. Queens College, University of the City of New York	To conduct museum studies of unique specimens of fossil mammals in Poland in connection with studies of evolution.	1971est.	5,000
8. Office of Environmental Studies, Oceanography and Limnology Program, Smithsonian Institution	International Decade of Ocean Exploration (IDOE), cooperative investigations of the Mediterranean aboard the Smithsonian research vessel PHYKOS as follows:	1971est.	230,000
--University of Southern California	Dredging, coring and bottom grab sampling in studies of microscopic sea life and fossils of such life.		
--National Museum of Natural History, Smithsonian Institution	Deep sea dredging to study recent changes in the geography of biological regions through study of the changing conformation of the highly adaptable animal, the ostracod.		

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>
--Duke University Durham, North Carolina	Bi-monthly cruises to collect samples for the study of the development, distribution and biology of crab larvae.	
--Washington State University	Biological sampling for studies of the paleontology of Pteropods.	
--University of North Carolina	Isolation and study of pure cultures of marine fungi.	
--National Museum of Natural History Smithsonian Institution	Plankton tows for studies of planktonic foraminifera.	
--Florida State University	Sampling for studies of deep sea biology and geology.	
--University of Delaware	Towing multiple plankton samplers to study the vertical distribution of the cosmopolitan pteropods in relation to water masses.	
--University of California	Sampling deeper than 200 meters to study the systematics and distribution of marine mites.	
--Division of Fishes National Museum of Natural History Smithsonian	Long line fishing for several hundred specimens for a study of the distribution of the common sharksucker.	
--University of North Carolina	Trawling, gill net, and long line collection of samples for systematic and distribution studies of sharks and their relatives.	
--Department of Invertebrate Zoology, Smithsonian Institution	Mid-water trawling for studies of the systematics, distribution and ecology of pelagic Cephalopods.	
--Department of Paleobiology Smithsonian Institution	Dredging, coring and bottom photography to study the morphology of sediments and sub-bottom.	

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U.S. Dollars</u>	
--Massachusetts Institute of Technology	Deep lowerings of coring and grab sampling equipment for study of the deepest Mediterranean geological structures.		
--Woods Hole Oceanographic Institution, Massachusetts	Submergible dives to explore the water transport over the Scarpanta sill in the Eastern Mediterranean.		
9. Office of Environmental Studies, Oceanography and Limnology Program Smithsonian Institution	To initiate study of the existing ecosystem of the Eastern Arabian Sea through oceanographic cruises undertaken in cooperation with the Indian National Institute of Oceanography.	1971est.	140,000
10. Office of Environmental Studies, Oceanography and Limnology Program Smithsonian Institution	To initiate a multi-year program of study of the ecology of coral reefs in India.	1971est.	56,000
<u>Subtotal, Estimate for New Research</u>			504,000
<u>Total, Systematic and Environmental Biology</u>			<u>1,800,000</u>

III. International Biological Program (IBP)

A. On-going Projects

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U.S. Dollars</u>	
1. National Academy of Sciences - U.S. National Committee to the International Biological Program	To continue direct support to the U.S. National Committee to the International Biological Program for planning symposia, training of U.S. scientists and research program development.	1971est. 1970 1968	25,000 25,000 10,000
2. National Academy of Sciences -U.S. National Committee to the IBP	To continue development of joint U.S. -Indian research projects which strengthen the research of United States institutions and con- tribute to the priority objectives of the U. S. I. B. P.	1971est. 1970est. 1969	25,000 25,000 25,000

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>	
3. Office of Environmental Sciences, Smithsonian Institution	To continue ecological studies of the last surviving population of the Asiatic lion in the Gir Forest in India and to recommend techniques for conservation of the animal and his habitat.	1971est.	20,000
4. Yale University New Haven, Conn.	To continue to study habitat relationships, numbers and distribution of wild antelope, deer, boar and other hooved animals in the Gir Forest India as part of a broad study of this tropical forest which includes study of the Asiatic lion.	1971est. 1970	50,000 35,000
<u>B. Pending Projects</u>		<u>Estimated Request in U. S. Dollars</u>	
1. Office of Environmental Studies, Smithsonian Institution	To contribute to American ecological studies of Mediterranean and Saharan environments in a multi-national project initiated by the International Biological Program's Terrestrial Conservation Section in Tunisia.	1971est. 1970est.	80,000 80,000
<u>C. New Projects</u>			
1. Oak Ridge National Laboratory Oak Ridge, Tenn.	To conduct cooperative research in Poland on temperate zone forest and grassland ecosystems supplementing studies conducted in the United States.	1971est.	25,000
2. Pennsylvania State University	To conduct comparative studies of human adaptability at high altitudes in India.	1971est.	100,000
3. University of Minnesota	To study biological rhythms in man and beast in India.	1971est.	50,000
4. Pennsylvania State University and the University of Minnesota	To study in South Asia the international spread of plant disease by means of airborne organisms.	1971est.	50,000
5. University of Utah	To conduct comparative studies in the arid climates of Egypt and India supplementing studies conducted in the United States.	1971est.	25,000

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
6. University of Texas	To conduct studies of convergent and divergent evolution in desert flora of Tunisia and India.	1971est.	50,000
<u>Total International Biological Program</u>			<u>500,000</u>

IV. Museum Programs

A. On-going Projects

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
1. U. S. National Museum	To assist, under the U. S. National Museum Act, with museum expertise and support the program of the International Council of Museums (ICOM), a UNESCO affiliate, to develop teaching museums of science and technology in Asia and Africa. For example, the Smithsonian contributed in FY 1969 to studies resulting in recommendations to ICOM that there be established in India a laboratory for basic exhibits in science and technology where teaching exhibits will be built for circulation in industrializing countries. The experiment will provide opportunities to American Museum Specialists to observe the effectiveness of exhibits in teaching basic science and technology to people of all cultural backgrounds.	1971est.	55,000
		1970	25,000
		1969	20,000

B. Pending Projects

1. National Collection of Fine Arts and Smithsonian Traveling Exhibition Service	To prepare an exhibit catalogue, to be the first scholarly publication on a unique collection at Benares Hindu University, of miniature paintings of the Moghul period of Indian art for distribution through American museums exhibiting such art treasures, for the first time, in the United States.	1971est.	5,000
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C. New Projects

<u>Recipient</u>	<u>Projects</u>	<u>Estimated Request in U. S. Dollar</u>
1. United States National Museum	To support the participation of stone and wood conservation specialists from India and Poland in the symposium on this subject to be sponsored by the International Institute for Conservation of Historic and Artistic Works (IIC).	1971est. 10,000
2. American Association of Museums and the United States National Museum	To initiate a program of professional training for museum curators and technicians in collaboration with museums of India, Pakistan, Tunisia and Egypt through two-way exchanges of personnel for on-the-job training. Participants would be expected to serve at least six months in a museum housing collections of direct importance to their professional development.	1971est. 30,000
<u>Total Museum Programs</u>		<u>100,000</u>

V. AstrophysicsA. On-going Projects

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>	
1. Smithsonian Astrophysical Observatory, Cambridge, Mass.	To continue balloon experiments in cooperation with the Tata Institute of Fundamental Research, Bombay, India on gamma radiation reaching the earth's upper atmosphere from outer-space at the magnetic equator.	1971est.	42,000
		1970est.	42,000
		1969	4,000
		1968	29,000
2. Hunter College of the City University of New York and Smithsonian Astro- physical Observatory	To continue computer analysis in Israel of the application of prin- ciples of plasma physics concerning the movement of particles at ex- tremely high speeds to the move- ment of celestial bodies in galaxies-- a study of the collective behavior of self-gravitating systems.	1971est.	15,000
		1970	14,000
		1968	41,800
3. Smithsonian Astro- physical Observatory	To continue studies in Israel com- paring theories developed separately of the nature of the interior and of the exterior of evolving stars.	1971est.	13,000
		1970	28,000
		1969	27,300
4. Smithsonian Institution Office of the Secretary	To assist in studies sponsored by newly created Center for Short- Lived Phenomena, a clearing house for the receipt and dissemi- nation of information concerning rare or infrequent natural events that might otherwise go unobserved or uninvestigated, such as remote volcanic eruptions, the birth of new islands the fall of meteorites and large fire balls and sudden changes in biological and ecological systems.	1971est.	24,000
		1969	9,540
<u>Subtotal, On-going Research</u>			94,000

B. Pending Projects

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
1. Smithsonian Astro- physical Observatory	To record and analyze together, with data from around the world, at the Uttar Pradesh State Observatory, India, film exposures of suspected flare stars, a relatively newly dis- covered class of variable stars, with radio and optical energies several orders of magnitude higher than emissions from the largest solar flares.	1971est.	6,000
		1970est.	10,000

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request</u>	
		<u>in U. S. Dollars</u>	
2. Harvard University	To initiate a collaborative program with the Indian Institute of Science leading to a publication on the historical, mathematical and theoretical foundations of the theory of radiation gas dynamics.	1971est.	9, 100
3. Harvard University and the Smithsonian Astrophysical Observatory	To select, translate, and publish the key works of the distinguished Polish Copernican scholar, L. A. Birkenmajer, in collaboration with the International Astronomical Union. The publication will make available, for the first time to large segments of American and other English speaking scholarly communities, invaluable analyses of the astronomy of Copernicus.	1971est.	12, 000
4. Harvard University and Smithsonian Astrophysical Observatory	To conduct laboratory studies in India of the spectra of hybrids and oxides in the visible and vacuum ultra violet region.	1971est.	29, 000
5. Smithsonian Astrophysical Observatory, Cambridge, Mass.	To investigate solar radiation pressure perturbations upon the Passive Geodetic Earth-Orbitting satellite (PAGEOS) in collaboration with the University of Warsaw and the Polish Academy of Sciences.	1971est.	45, 000
6. Harvard University	To conduct laboratory studies of the excitation processes in stellar, planetary and cometary atmospheres.	1971est.	41, 700
7. Smithsonian Astrophysical Observatory	To measure air glow and ionospheric characteristics at the magnetic equator in studies contributing to the understanding of the nature of the upper atmosphere and of some of its effects on satellites.	1971est.	17, 500
<u>Subtotal, Estimate for Pending Research</u>			160, 300

C. New Projects

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
1. Yale University and Smithsonian Astrophysical Observatory	To conduct research in theories of planetary motion in Egypt.	1971est.	40,000
2. Harvard University and Smithsonian Astrophysical Observatory	To conduct studies of thermal emission and absorption of the diatomic molecules in India.	1971est.	16,000
3. Dickinson College, Pennsylvania	To investigate the astronomical alignment of the Temples of Karnak, Egypt.	1971est.	13,000
4. Smithsonian Astro- physical Observatory and consortium of United States Astro- nomical Research Institutions	To conducted coordinated, 24 hours observation of astronomical phenomena in collaboration with Israeli institutions employing telescopes in the western United States, Chile and Israel.	1971est.	154,700
--U. S. Naval Research Laboratory, Washington, D. C. and Massachusetts Institute of Tech- nology	To conduct optical and photoelectric monitoring of X-ray sources.		
--California Institute of Technology	To conduct photoelectric monitoring of the continuum and line emission from quasi-stellar objects (QSO) and the nuclei of N-type galaxies.		
--Smithsonian Astrophysical Observatory	To conduct a high-dispersion abundance analysis of stars in the Pleiades.		
--State University of New York at Stony Brook	To determine the rate of star formation in young clusters.		
--Harvard College Observatory, Cambridge, Mass.	To conduct photometric observations of the High Balmer Lines (near the Balmer Limit) and the Balmer Continuum in Planetary Nebulas.		

Estimated Request
in U. S. Dollars

<u>Recipient</u>	<u>Project</u>		<u>Estimated Request in U. S. Dollars</u>
5. University of New Hampshire	To conduct solar neutron experiments in India.	1971est.	30,000
6. Harvard University, Massachusetts Institute of Technology, Alaska Methodist University	To investigate the feasibility of astronomical programs with astronomers in India, United Arab Republic, and Poland.	1971est.	22,000
7. Harvard University and Smithsonian Astrophysical Observatory	To conduct in India spectroscopic studies of free radicals of astro- physical interest by the bombard- ment of accelerated charged particles.	1971est.	40,000
			<hr/>
	<u>Subtotal, Estimate for New Research</u>		315,700
	<u>Total, Astrophysical</u>		<hr/> <hr/> 570,000

VI. Program Development and Administration

<u>Recipient</u>	<u>Project</u>		<u>Estimated Request in U. S. Dollars</u>
1. Smithsonian Institution Office of International Activities	To defray costs of inspection and audit of field research sites and costs of negotiation with host governments on program operations--costs which increase in step with the increasing numbers of active grants.	1971est. 1970 1969 1968	30,000 20,000 15,000 10,000
			<hr/>
	<u>Total, Program Development and Administration</u>		<hr/> <hr/> 30,000
	 GRAND TOTAL		 <hr/> <hr/> \$4,500,000

MUSEUM PROGRAMS AND RELATED RESEARCH
(SPECIAL FOREIGN CURRENCY PROGRAM)

Distribution of Funds by Country

Fiscal Years 1969, 1970, and 1971

Country	1969	1970	1971
India..... . . \$	490,066	\$ 520,000	\$ 1,140,000
Egypt..... . .	400,210	300,000	640,000
Israel..... . .	450,000	481,000	679,500
Morocco..... . .	25,000	50,000	150,500
Pakistan..... . .	34,380	75,000	150,000
Tunisia..... . .	225,000	155,000	250,000
Poland..... . .	100,000	100,000	200,000
Guinea..... . .	3,000	4,800	100,000
Burma..... . .	0	50,000	120,000
Yugoslavia..... . .	479,333	480,000	650,000
Ceylon..... . .	109,011	100,200	420,000
Total....	<u>\$2,316,000</u>	<u>\$2,316,000</u>	<u>\$4,500,000</u>

Mrs. HANSEN. An increase of \$2,184,000 is requested for museum programs and related research (special foreign currency program).

Are you aware of any instances where grants under this program were made to any organization other than an American university? What I have particular reference to is whether or not you would deem it proper to make a grant under this program to an individual.

Dr. RIPLEY. I can't answer that. Dr. Galler, do you know?

Dr. GALLER. I believe, Madam Chairman, that legally these grants are made for individual research but through universities.

Dr. RIPLEY. Yes; this is my understanding.

Mrs. HANSEN. Does the university designate the individual?

Dr. GALLER. Not exactly, Madam Chairman.

Dr. RIPLEY. He is the project leader, or whatever you call it, under the proposal, but the reason I hesitated there, Madam Chairman, is I can't recall an instance where we have not given a grant through an institution, although the grant may be for a one-man or individual project.

Mr. WARNER. That is correct. The grant is always in the name of a university.

Dr. RIPLEY. Or equivalent institution.

Mrs. HANSEN. Insert in the record a statement on the availability of grant funds to an individual.

Dr. GALLER. Yes.

(The information follows:)

Funds are available only to U.S. institutions, and are normally transferred to the control of that institution by means of a grant contract made with the institution. There are instances where research support is provided to an individual from the institution in the form of a travel document, but only when approved by the American university itself to which the individual belongs.

PURPOSES OF FOREIGN CURRENCY GRANTS

Dr. RIPLEY. I think we have a very complete documentation of all the grants. Perhaps it is an attachment.

Mrs. HANSEN. Insert the information in the record.

(The information follows:)

SMITHSONIAN INSTITUTION—SPECIAL FOREIGN CURRENCY PROGRAM (MUSEUM PROGRAMS AND RELATED RESEARCH)—AMERICAN UNIVERSITIES AND OTHER BASIC RESEARCH INSTITUTIONS, BY STATE, RECEIVING FOREIGN CURRENCY GRANTS

Institution	Purpose	Approximate amount in dollar equivalent		
		Grants	Institution	State total
ARIZONA				
Arizona, University of, Tucson	Cultural anthropology, India	\$77,782	\$154,262	\$154,262
	Prehistoric archeology, Israel (2 years)	76,480		
CALIFORNIA				
California, University of, Berkeley	Botany, Morocco	2,270	94,280	406,957
	Studies of the evolution lizards, Yugoslavia	4,162		
Lawrence Radiation Laboratory	X-raying pyramids, Egypt (3 years)	87,848		
California, University of, Los Angeles	Prehistoric archeology, Yugoslavia—2 projects (2 years)	110,937	201,577	
Stanford University, Stanford	Salvage archeology, Yugoslavia (2 years)	90,640		
			111,100	
COLORADO				
Colorado, University of, Boulder	Prehistoric archeology, Tunisia (2 years)	81,896	195,206	195,206
	Paleontology, Tunisia (2 years)	113,310		

See footnotes at end of table.

SMITHSONIAN INSTITUTION—SPECIAL FOREIGN CURRENCY PROGRAM (MUSEUM PROGRAMS AND RELATED RESEARCH)—AMERICAN UNIVERSITIES AND OTHER BASIC RESEARCH INSTITUTIONS, BY STATE, RECEIVING FOREIGN CURRENCY GRANTS—Continued

Institution	Purpose	Approximate amount in dollar equivalent		
		Grants	Institution	State total
CONNECTICUT				
Yale University, New Haven	Mammal ecology, India	\$35,055	\$233,461	\$233,461
Peabody Museum	Paleontology, Egypt	19,310		
	Paleontological investigations of ancestors of man, Egypt and India, 2 projects (2 years)	47,694		
		131,402		
FLORIDA				
Miami, University of, Institute of Marine Sciences, Miami	Taxonomy of fishes, Ceylon		24,800	26,750
Florida, University of, Gainesville	Study of meiofauna, Tunisia		1,950	
GEORGIA				
Georgia, University of, Athens	Ecology of mammals, Poland		73,468	73,468
HAWAII				
Hawaii, University of, Honolulu	Prehistoric archeology, Ceylon		6,660	6,660
ILLINOIS				
Chicago, University of, Chicago	Cultural anthropology, India	55,295	66,695	123,082
	Archeology and art history, India	11,400		
Illinois, University of, Urbana	Ethnomusicology, Israel		36,575	
Northwestern University, Evanston	Prehistoric archeology, Yugoslavia		11,917	
Southern Illinois University, Carbondale	Impact of rural roads, Yugoslavia		7,895	
INDIANA				
Indiana, University of, Bloomington	Classical archeology, Yugoslavia		41,706	41,706
MARYLAND				
Johns Hopkins University, Baltimore	Mammal ecology, India		39,209	39,209
MASSACHUSETTS				
American Research Center in Egypt, Boston (a consortium of 11 American institutions—see Appendix I).	Egyptian archeology, Mendes, Egypt (4 years)	127,458	698,622	985,367
	Participating institutions: Brooklyn Museum, Brooklyn, N.Y.; University of Chicago, Chicago, Ill.; Columbia University, New York, N.Y.; New York University, New York, N.Y.			
	St. Catherine's monastery, Sinai, Egypt (3 years)	25,332		
	Participating institutions: Princeton University, Princeton, N.J.; Michigan, University of Ann Arbor, Mich.			
	Islamic archeology, Fustat, Egypt (3 years)	107,613		
	Participating institution: Princeton University, Princeton, N.J.			
	Epigraphic survey, Luxor, Egypt (4 years)	119,809		
	Participating institution: Chicago, University of, Chicago, Ill.			
	Physical anthropology, Giza, Egypt	4,222		
	Participating institution: Chicago, University of, Chicago, Ill.			
	Prehistoric archeology, Gebel Adda, Egypt	41,289		
	Study of ancient glass, Egypt	19,500		
	Survey of ancient sites, Luxor, Egypt	9,200		
	Cairo center (4 years)	148,007		
	Egyptian archeology, Hierakonpolis, Egypt (2 years)	91,191		
	Participating institution: Washington, University of, Seattle, Wash.			
	Arabic literature	5,001		
	Participating institution: California, University of, Los Angeles, Calif.			

See footnotes at end of table.

SMITHSONIAN INSTITUTION—SPECIAL FOREIGN CURRENCY PROGRAM (MUSEUM PROGRAMS AND RELATED RESEARCH)—AMERICAN UNIVERSITIES AND OTHER BASIC RESEARCH INSTITUTIONS, BY STATE, RECEIVING FOREIGN CURRENCY GRANTS—Continued

Institution	Purpose	Approximate amount in dollar equivalent		
		Grants	Institution	State total
American Schools of Oriental Research, Boston: institutional corporation composed of 121 American institutions (see app. II).	Biblical archeology, Israel (3 years)..... Principal participating institutions: Southern Baptist Theological Seminary, Louisville, Ky.; Orew Theological Seminary, Madison, N.J.; McCormick Theological Seminary, Chicago, Ill.; Harvard University, Cambridge, Mass.; Concordia Seminary, St. Louis, Mo.		\$281,705	
Boston Museum of Fine Arts, Boston, Mass.	Exhibition of Egyptian Art.....		5,040	
MICHIGAN				
Michigan, University of, Ann Arbor	Prehistoric archeology, Israel (2 years).....	\$97,660	297,557	\$297,557
	Prehistoric archeology, Poland (3 years).....	95,041		
	Marine biology, India (2 years).....	46,808		
	Coral reef ecology, Israel.....	12,036		
	Limnology, India.....	30,792		
	Prehistoric archeology, Yugoslavia.....	15,220		
MINNESOTA				
Minnesota, University of, Minneapolis.	Roman archeology, Yugoslavia (3 years).....	218,487	226,206	226,206
	Paleoecological studies of early man in Iran—collaborative studies with Polish scholars.....	7,719		
MISSOURI				
Missouri, University of, Columbia	Phoenician archeology, Israel (with Corning Museum) (2 years).....	45,750	153,820	153,820
	Mammal ecology, Israel.....	45,070		
	Hellenistic archeology, Israel (2 years).....	63,000		
NEW HAMPSHIRE				
Dartmouth College, Hanover.....	Limnology, India.....		47,392	47,392
NEW JERSEY				
Institute of Advanced Studies, Princeton.	Bronze and Iron Age studies, Yugoslavia (4 projects) (3 years).....	2,030 24,126 21,628 14,608	62,392	129,478
Rutgers University, Douglass College, New Brunswick.	Classical archeology, Yugoslavia (2 years).....		60,876	
Princeton University, Princeton.....	Comparative studies of tropical rain forests.....		6,200	
NEW YORK				
Brooklyn College of the City University of New York, Brooklyn.	Prehistoric archeology, Yugoslavia (2 years).....		16,228	140,528
Brooklyn Museum, Brooklyn.....	Egyptology, Egypt.....	14,157	35,630	
	Ancient goldwork, Egypt (2 years).....	6,180		
	Archeological survey, Egypt.....	10,293		
	Model of Egyptian temple.....	5,000		
New York, State University of, Stony Brook.	Coral reef ecology, Israel (2 years).....		35,610	
Union College, Schenectady.....	Ecology of delta lakes, Egypt.....		50,470	
Columbia University, Lamont Geological Observatory.	Oceanography, India.....		2,590	
NORTH CAROLINA				
Duke University, Durham.....	Lichenology, Morocco.....		2,711	2,711
OHIO				
Denison University, Granville.....	Roman archeology, Yugoslavia (3 years).....		164,198	977,930
Hebrew Union College, Cincinnati (HUC's Jerusalem School of Biblical Archeology is sponsored by a consortium of 43 American colleges and universities—see app. III).	Biblical archeology, Israel (5 years).....		809,040	
Natural Science Museum, Cleveland.	Paleontology, West Pakistan.....		2,840	
Kent State University, Kent.....	Studies of mollusks, India.....		1,852	

See footnotes at end of table.

SMITHSONIAN INSTITUTION—SPECIAL FOREIGN CURRENCY PROGRAM (MUSEUM PROGRAMS AND RELATED RESEARCH)—AMERICAN UNIVERSITIES AND OTHER BASIC RESEARCH INSTITUTIONS, BY STATE, RECEIVING FOREIGN CURRENCY GRANTS—Continued

Institution	Purpose	Approximate amount in dollar equivalent		
		Grants	Institution	State total
OREGON				
Oregon, University of, Eugene	Prehistoric archeology, Guinea	\$55,301		\$55,301
PENNSYLVANIA				
American Institute of Indian Studies, Philadelphia (a consortium of 23 American institutions including 8 colleges and universities—see app. IV).	Support for AIIS Center at Banaras (art history and archeology), 5 years. Support for research programs conducted under the auspices of California State College, Hayward, Calif.; Chicago, University of, Chicago, Ill.; Colgate University, Hamilton, N.Y.; Columbia University, New York, N.Y.; Cornell University, Ithaca, N.Y.; Duke University, Durham, N.C.; Harvard University, Cambridge, Mass.; Jefferson Community College, Watertown, N.Y.; New York, State University of, Binghamton, N.Y.; Pennsylvania, University of, Philadelphia, Pa.; Rochester, University of, Rochester, N.Y.; St. Lawrence University, Canton, N.Y.; Washington, University of, Seattle, Wash.; Wisconsin, University of, Madison, Wis.	\$700,145 275,280	975,425	1,603,986
Carnegie Museum, Pittsburgh	Biblical archeology, Israel (4 years) Underwater archeology, Israel. Paleontology, Poland	156,579 19,172 500	176,251	
Pennsylvania, University of, Philadelphia.	Studies desert glass, Egypt Study Aknaten Temple, Egypt (4 years) Study tomb inscriptions, Egypt (3 years) Prehistoric archeology, Pakistan	27,468 259,193 32,074 40,050	358,785	
Pittsburgh, University of, Pittsburgh.	Prehistoric archeology, Yugoslavia		93,525	
TEXAS				
Southern Methodist University, Dallas.	Prehistoric archeology, Egypt (3 years)	5,204 39,719 173,116	118,039	188,245
Texas Technological College, Lubbock.	Studies of algae, Israel		9,025	
Texas, University of, Austin	Classical archeology, Yugoslavia		61,181	
WASHINGTON				
Washington, University of, Seattle.	Prehistoric archeology, Pakistan Cultural anthropology, Ceylon (2 years) Study of wild boars, West Pakistan Crustacean studies, Ceylon, India, Yugoslavia, and Tunisia.	52,376 36,677 46,660 2,390	138,103	140,070
Battelle Memorial Institute, Richland.	Tethyan fusulinid studies, Tunisia and Yugoslavia		1,967	
WASHINGTON, D.C.				
American Anthropological Association.	Methodology symposium, several "excess" countries.		10,000	176,806
American University in Cairo	Medieval Islamic architecture, Egypt		16,076	
Dumbarton Oaks Center for Byzantine Studies.	Roman mosaics, Tunisia (2 years)		90,730	
National Academy of Sciences, Washington, D.C.	International biological program, all "excess" currency countries (2 years). Mediterranean region conservation conference, Tunisia (IBP).	35,000 25,000	60,000	
WISCONSIN				
Wisconsin, University of, Madison	Prehistoric archeology, Egypt Cultural anthropology, India (2 projects)	4,024 52,609 11,994	68,627	68,627

¹ 2 years.

APPENDIX I.—American Research Center in Egypt Consortium Members.

California, University of, Berkeley Calif.	Michigan, University of, Ann Arbor, Mich.
California, University of, Los Angeles, Calif.	New York University, New York, N.Y.
Chicago, University of, Chicago, Ill.	Pennsylvania, University of, Philadelphia, Pa.
Columbia University, New York, N.Y.	Princeton University, Princeton, N.J.
Harvard University, Cambridge, Mass.	Utah, University of, Salt Lake City, Utah.
Indiana University, Bloomington, Ind.	

APPENDIX II.—American Schools of Oriental Research Institutional Corporation Members.

Alma College (California).	General Theological Seminary.
Anderson College & Theological Seminary.	Golden Gate Baptist Theological Seminary.
Andover Newton Theological Seminary.	Gordon Divinity School.
Andrews University.	Grace Theological Seminary.
Asbury Theological Seminary.	Hamma Divinity School.
Ashland Theological Seminary.	Harding College School of Bible & Religion.
Augustana Theological Seminary.	Hartford Seminary Foundation.
Baltimore Hebrew Teachers Training College.	Harvard University.
Bangor Theological Seminary.	Hebrew Union College.
Berkeley Baptist Divinity School.	Hliff School of Theology.
Berkeley Divinity School.	Jewish Institute of Religion.
Bethany Biblical Seminary.	Jewish Theological Seminary of America.
Biblical Seminary in New York.	Johns Hopkins University.
Boston University School of Theology.	Kenyon College.
Brigham Young University.	Lancaster Theological Seminary.
Brown University.	Louisville Presbyterian Seminary.
California Baptist Theological Seminary.	Loyola University (Chicago).
Candler School of Theology (Emory University).	Lutheran Theological Seminary (Gettysburg).
Catholic University of America.	Lutheran Theological Seminary (Philadelphia).
Central Baptist Theological Seminary.	McCormick Theological Seminary.
Central Conference of American Rabbis.	Methodist Theological School in Ohio.
Chicago Luthern Theological Seminary.	Metropolitan Museum of Art.
Christian Theological Seminary.	Midwestern Baptist Theological Seminary.
Church Divinity School of the Pacific.	Moravian College.
Colgate—Rochester Divinity School.	Mount Holyoke College.
College of the Bible (Lexington).	Nazarene Theological Seminary.
Columbia Theological Seminary.	New Brunswick Theological Seminary.
Columbia University.	Northern Baptist Theological Seminary.
Concordia Teachers College.	Northwest Christian College.
Concordia Theological Seminary.	Northwestern Luthern Theological Seminary.
Cornell University.	Oberlin Graduate School of Theology.
Covenant College & Theological Seminary.	Pacific Lutheran Theological Seminary.
Crozer Theological Seminary.	Pacific School of Religion.
Drake University Divinity School.	Philadelphia Divinity School.
Drew University Theological Seminary.	Phillips University Graduate Seminary.
Dropsie College.	Pittsburg Theological Seminary.
Duke University.	Princeton Theological Seminary.
Dumbarton Oaks Research Library.	Princeton University.
Eastern Baptist Theological Seminary.	Rosary College.
Episcopal Theological School.	San Francisco Theological Seminary.
Episcopal Theological Seminary of the Southwest.	Seabury-Western Theological Seminary.
Evangelical Theological Seminary.	Smith College.
Fordham University.	Society of Biblical Literature & Exegesis.
Fuller Theological Seminary.	
Garrett Biblical Institute.	

Southeastern Baptist Theological Seminary.
 Southern Baptist Theological Seminary.
 Southern California School of Theology.
 Southern Methodist University (Perkins School of Theology).
 Southwestern Baptist Theological Seminary.
 Stanford University.
 St. John's Seminary.
 St. Joseph's Seminary.
 St. Mary's Seminary.
 St. Paul's School of Theology
 St. Thomas Seminary (Colorado)
 Syracuse University
 Texas Christian University
 Union Theological Seminary
 (New York)
 Union Theological Seminary in Virginia

United Theological Seminary
 University of California
 University of Chicago
 University of Cincinnati
 University of Dubuque Theological Seminary
 University of Michigan
 University of Notre Dame
 University of Pennsylvania
 University of Wisconsin
 Vanderbilt University
 Virginia Theological Seminary
 Wake Forest College
 Wartburg Theological Seminary
 Wellesley College
 Wesley Theological Seminary
 Western Theological Seminary
 Wheaton College (Illinois)
 Yale University

APPENDIX III.—Consortium of institutions which sponsor Hebrew Union College's Jerusalem School of Biblical Archeology.

Antioch College, Yellow Springs, Ohio
 Boston University, Boston, Mass.
 Brandeis University, Waltham, Mass.
 Carnegie Museum, Pittsburgh, Pa.
 Christian Theological Seminary,
 Indianapolis, Ind.
 Church Divinity School of the Pacific,
 Berkeley, Calif.
 Cincinnati Art Museum, Cincinnati,
 Ohio
 Colgate-Rochester Divinity School,
 Rochester, N.Y.
 College of the Holy Cross, Worcester,
 Mass.
 Emanuel School of Religion, Milligan
 College, Tenn.
 General Theological Seminary,
 New York, N.Y.
 The Hartford Seminary Foundation,
 Hartford, Conn.
 Harvard University, Cambridge, Mass.
 Lutheran School of Theology, Maywood,
 Ill.
 McCormick Theological Seminary,
 Chicago, Ill.
 New York University, New York, N.Y.
 Oberlin College, Oberlin, Ohio
 Pittsburgh Theological Seminary,
 Pittsburgh, Pa.
 Princeton Theological Seminary,
 Princeton, N.J.
 St. Marys College, St. Marys, Calif.
 St. Paul School of Theology, Methodist,
 Kansas City, Mo.
 San Francisco Theological Seminary,
 San Anselmo, Calif.
 School of Theology at Claremont, Calif.
 Southern Baptist Theological Seminary,
 Louisville, Ky.
 Temple University, Philadelphia, Pa.
 Union Theological Seminary, New York,
 N.Y.
 University of California, Los Angeles,
 Calif.
 University of Cincinnati, Cincinnati,
 Ohio
 University of Michigan, Ann Arbor,
 Mich.
 University of Missouri, Columbia, Mo.
 The University Museum of the Univer-
 sity of Pennsylvania, Philadelphia,
 Pa.
 University of Southern California, Los
 Angeles, Calif.
 University of Wisconsin, Madison, Wis.
 Vanderbilt University, Nashville, Tenn.
 Wayne State University, Detroit, Mich.
 The Wesley Theological Seminary,
 Washington, D.C.
 Xavier University, Cincinnati, Ohio
 Yale University, New Haven, Conn.

APPENDIX IV.—American Institute of Indian Studies consortium members.

California, University of
 Chicago, University of
 Columbia University
 Cornell University
 Duke University
 Hawaii, University of
 Illinois, University of
 Kansas State University
 Michigan, University of
 Minnesota, University of
 Missouri, University of
 Pennsylvania, University of
 Rochester, University of
 State University of New York
 Syracuse University
 Texas, University of
 Washington, University of
 Wisconsin, University of
 American University
 Carleton College
 Claremont Graduate School and
 University Center
 Colgate University
 Massachusetts Institute of Technology
 Northern Iowa, University of

Oakland University (Rochester, Mich.) Sweet Briar College
 Rutgers University Wooster, The College of

CRITERIA FOR THE AWARD OF GRANTS

Dr. RIPLEY. Off the record.

(Discussion off the record.)

Mrs. HANSEN. Also insert in the record your criteria for awarding grants.

(The information follows:)

The Institution's criteria for the award of grants in each scientific discipline are determined by the judgment of regularly constituted scientific panels, composed of distinguished senior scientists in each discipline, most of whom are drawn from outside the Institution and each of whom serves for 3 years on a given panel. The members of these scientific panels are chosen with the advice of the Institution's scientific staff and are named by the Secretary. The major panels meet twice yearly to examine scientific proposals submitted to the Institution by American colleges, universities, and museums, and to decide which of these proposals deserves financial support on the basis of its competitive scientific merit, as determined by the eminent practitioners of each discipline who compose the panels. Prior to the formal meetings of the scientific panels, outside specialists qualified to comment on each individual research proposal are asked to provide written reviews on it. These reviews are provided, together with each research proposal itself, to the regularly constituted scientific panel at the time of its scheduled meeting. Criteria used by the scientific panels to determine the excellence of proposals are listed in the foreign currency program's official public "Announcement" as follows:

"the importance of the research objective; the methodology proposed to carry it out; and the priority of the research compared with other proposals under review. Funding of approved research also depends upon the current availability of "excess" currencies to the Smithsonian."

CONSTRUCTION

Mrs. HANSEN. Please insert in the record pages D-1 through D-6 of the justifications.

(The pages follows:)

CONSTRUCTION AND IMPROVEMENTS, NATIONAL ZOOLOGICAL PARK

1969 Appropriation.....	\$300,000
1970 Appropriation.....	\$600,000
1971 Estimate.....	\$200,000

Recognizing that the National Zoological Park had not had any major improvements since the mid 1930's and that it was in a disgracefully deteriorated condition, the Congress in 1963 approved a master plan for improvement of its physical facilities. The original schedule called for a ten year program and funds were appropriated for each of the next five consecutive years in support of the master plan. In fiscal year 1968, construction funds were not appropriated to maintain the momentum of the program and the work was scaled down to those critical improvements required to extend the useful life of facilities not yet replaced and to minor projects which contributed to the elimination of water pollution of Rock Creek and air pollution. This holding action has continued through fiscal year 1970. Funds appropriated this year will be used for completion of the heating plant conversion and for such essential safety and preventive maintenance projects as replacing deteriorated wooden handrails in and outside of the buildings, installing fire alarm systems, repairing the Elephant House roof, replacing cage doors, and installing a prototype system for manure disposal to combat air pollution.

In fiscal year 1971, the Smithsonian will again defer a request for funds to resume progress toward completion of the improvement program and will request funds only for repairs and continued maintenance to keep those buildings and exhibits, which will eventually be replaced, in usable condition. Included in the necessary projects are waterproofing buildings, painting of buildings and cages to prevent structural damage, and repair of outside cages. Funds in the amount of \$200,000 are requested for these purposes.

RESTORATION AND RENOVATION OF BUILDINGS

1969 Appropriation.....	\$400,000
1970 Appropriation.....	\$525,000
1971 Estimate.....	\$1,130,000

An appropriation of \$1,130,000 is requested for the following projects:

Renwick Gallery of Art	\$300,000
Arts and Industries Building.....	500,000
Smithsonian Tropical Research Institute....	25,000
Fumigation Facility	75,000
Library Modifications	50,000
Museum Support Facility	80,000
Feasibility Studies	<u>100,000</u>

Total estimate for 1971.....\$1,130,000

Less amount appropriated in fiscal year 1970 525,000

Increase in fiscal year 1971..... \$605,000

Renwick Gallery of Art

An appropriation of \$300,000 is requested to complete a program of restoration and improvement of the old Court of Claims building on Lafayette Square, now known as the Renwick Gallery of Art.

Completion of restoration work on the Renwick Gallery is of the highest priority, not only to protect the \$2,070,000 thus far appropriated by the Congress and invested in construction and restoration work, but also to make this historically important and centrally located building available for use and enjoyment by the public.

With funds previously appropriated, work is being completed now for central rooms on each floor, thereby assuring that a portion of the building can be opened to the public by the fall of 1970. An additional appropriation of \$300,000 will permit completion of flooring, plastering, painting, lighting, and millwork for the remainder of the rooms and to install necessary furnishings and exhibits.

With this appropriation the essential renovation and restoration work will be sufficiently complete to permit full use of the building. To restore the building interior to comparable elegance approaching the original design would be prohibitively expensive; work is being limited, therefore, to architectural restoration of the main building features.

The Renwick Gallery in association with the National Collection of Fine Arts will be primarily concerned with the American decorative arts and designs, broadly defined to reflect the diverse competence and collections within the Smithsonian Institution as well as important objects and collections that will be borrowed for exhibit. Because of its proximity to the White House and to centers of government and private activity, a carefully planned program of exhibits, talks, concerts, and informal lectures will be instituted to serve the interest of that area of the inner city.

Arts and Industries Building

An appropriation of \$500,000 is requested to construct second floor decks in the Arts and Industries Building to provide office and work space for the Smithsonian Institution staff.

In fiscal year 1967, the Congress appropriated \$133,000 to prepare plans and specifications for renovating the 90-year-old Arts and Industries Building, located at 9th Street and Independence Avenue. Although plans have been completed and construction can start upon receipt of an appropriation, the full funding request will be deferred until a future date, so that higher priority restoration and renovation projects elsewhere in the Institution may proceed. The total renovation cost for this building will be approximately \$3,000,000.

Included in the total project is an item amounting to \$500,000 for construction of several second floor decks in high ceiling court areas and thus put to good use space that is otherwise wasted. The additional floor space is planned for use as offices as well as for classroom and other public service purposes. Because of the urgent need for this space, this portion of the renovation project should proceed as soon as possible, and funds are requested as a priority item.

The demands for additional administrative and public service space for the Smithsonian are the natural result of substantially broadening the diversified programs of the Institution in recent years. Over twenty programs have been added by legislation, including such major museums and functions as the Museum of History and Technology, the National Portrait Gallery, the National Air and Space Museum, and the Hirshhorn Museum. All of these activities require administrative support from the personnel, fiscal, supply, buildings management, budget, and other management service units, as well as those units that more directly provide information and services to the public. With funds requested, substantial relief may be realized from the present overcrowding in administrative offices.

Smithsonian Tropical Research Institute

An appropriation of \$25,000 is requested for continuing emergency repairs to existing facilities.

In fiscal year 1970, \$25,000 were appropriated to start a program of repairs and renovation for the buildings on Barro Colorado Island and at the mainland facilities in the Panama Canal Zone. There are 15 small wood frame buildings on the Island, most of which are over 25 years old and in poor condition due to the high tropical humidity and insect infestations. A program of general improvements will cost approximately \$100,000 and would involve the replacement of flooring, wiring, roofing, screening, and some mechanical repairs and replacements. With the funds requested, many of these improvements can be made and the useful life of existing buildings extended.

Fumigation Facility

An appropriation of \$75,000 is requested to construct a fumigation facility in the Museum of Natural History Building.

Hundreds of thousands of organic specimens in the Collections, including plants, hides and skins, and articles made from leather, bone, and wood, require careful fumigation for preservation. Objects must be fumigated immediately upon receipt to eradicate live pests and then periodically to eradicate those hatched from eggs previously deposited or from new infestations.

In the past, fumigation work has been accomplished with a homemade facility in a room in the Museum of Natural History in a rather crude manner requiring hand pouring of fumigants. Modern building codes, requiring specialized facilities, ventilation, and safety features as well as improved methods for handling toxic fumigants have shown the Museum's facility to be obsolete, inadequate, and unsafe. For safety reasons, the facility has been closed and fumigation work is now accomplished by outside contracting or is being deferred.

The cost of transportation to private fumigation facilities as well as the inconvenience and danger to security of the Collections also justify this high priority request for construction of a new facility in the Museum of Natural History Building.

Funds requested will be used to construct a specially designed room, with sealable openings, safety control systems for storing and handling fumigants, and proper ventilation and exhaust systems.

Library Modifications

An appropriation of \$50,000 is requested to modify a portion of the space, in the Museum of Natural History Building, used by the Smithsonian Library.

The Library's collections now contain more than 750,000 pieces, most of which are housed in the Museum of Natural History Building, in less than 25,000 square feet of floor space. Because adequate operating space is not available nor can additional space be assigned at this time, it is necessary that maximum use be made of all available space and that mezzanines be constructed where head room permits.

With funds requested, it will be possible to construct a mezzanine level in three adjacent rooms and to install a booklift. This is a small, but important, project which will provide some urgently needed relief to the congested conditions now existing in the library.

Museum Support Facility

An appropriation of \$80,000 is requested for preparation of plans and specifications for an off-Mall central museum storage and study facility for the Smithsonian Institution.

Rather than continue to store increasing numbers of objects from the National Collections in the buildings on the Mall, a central storage and retrieval center for classifying, preserving, restoring, studying, and storing items is required along with shops and laboratories in support of research and education activities related to the Institution's work. A specially designed facility using modern storage and retrieval methods will permit improved management of the 60,000,000 items in the National Collections as well as making the collections more accessible for study and research. The space vacated on the Mall can be used for exhibits and other public education and service purposes.

Planning studies are now in progress to select a site for the center and to phase a development program over a ten-year period. This appropriation request is for design of the first increment of a long-range program.

Feasibility Studies

An appropriation of \$100,000 is requested to prepare feasibility studies for the future building needs of the Smithsonian Institution.

Careful advanced and long-range planning are essential if the future building needs for the complex and varied programs of the Smithsonian Institution are adequately identified, studied, and documented. With funds requested, urgent work can be started on studies of storage retrieval methods and methodology for the expanding collections; methods of cataloging, inventorying, and preserving specimens; feasibility studies for physical facilities to accommodate future research needs in tropical biology, astrophysical sciences, environmental and ecological studies on land now owned by the Institution; and for new museum space to improve and expand the exhibits and educational programs for the benefit of the people of the United States.

CONSTRUCTION
(JOSEPH H. HIRSHHORN MUSEUM AND SCULPTURE GARDEN)
(Liquidation of Contract Authority)

1969 Appropriation.....	\$2,000,000
1970 Appropriation.....	\$3,300,000*
1971 Estimate.....	\$8,897,000

By the Act of November 7, 1966, the Congress provided a site on the Mall for construction of the Joseph H. Hirshhorn Museum and Sculpture Garden and provided statutory authority for the appropriation of construction and operating funds. Within this appropriation authority, \$803,000 were appropriated in fiscal year 1968 for the preparation of plans and specifications. In fiscal year 1969, an additional \$2,000,000 were appropriated to start construction, and authorization was granted by the language in the appropriations bill to enter into construction contracts in an amount not to exceed \$14,197,000. An additional \$3,300,000 were appropriated in fiscal year 1970 toward liquidation of the contract authority.

The justification in support of the fiscal year 1970 budget request indicated that construction bids would be opened in the spring of 1969 and construction would be started soon thereafter. Bids were opened on May 27, 1969, but had to be rejected because the low bid exceeded available funds. Although this project was affected adversely by an unusual and unexpected sudden escalation in construction costs, the Congress will not be requested to provide an additional authorization of funds. The General Services Administration was instructed to revise the drawings and scale down the scope of work to stay within the existing authorization. Drawing revisions were completed in October 1969 and new bids were opened on December 18, 1969. Construction is now scheduled to start about March 1970 and be completed in about two years.

Because construction work will be in full progress during fiscal year 1971, an appropriation of the remaining \$8,897,000 is requested to liquidate the balance of the contract authority. This appropriation will be used to complete funding of construction contracts, to finance supervision and related construction management costs, and to provide some necessary equipment and facilities to install the Hirshhorn collection in the completed building.

* Excludes \$200,000 appropriated for the relocation of the Medical Museum (Armed Forces Institute of Pathology).

January 1970

SMITHSONIAN INSTITUTION
SCHEDULE OF BUILDING PROJECTS

	FY 1964	FY 1965	FY 1966	FY 1967	FY 1968	FY 1969	FY 1970	FY 1971	FY 1972
Remodeling of Civil Service Commission Bldg. (for art galleries)	Apprn. received, \$5,465,000	Under construction	Apprn. received, \$1,000,000	April 1967 completion	May 1968 opening (NCFEA)	Oct. 1968 opening (NPG)			
	Planning apprn. received, \$511,000	Remainder of planning apprn. received, \$1,364,000							Request construction apprn.
National Air and Space Museum Building	Apprn. received, \$1,275,000	Apprn. received, \$1,525,000	Apprn. received, \$1,539,000	Apprn. received, \$1,589,000	Apprn. received, \$400,000	Apprn. received, \$300,000	Apprn. received, \$600,000	Apprn. requested \$200,000	Request apprn. for continuing program
Construction and Improvements, National Zoological Park <u>1</u> /	Apprn. received, \$1,275,000	Apprn. received, \$1,525,000	Apprn. received, \$1,539,000	Apprn. received, \$1,589,000	Apprn. received, \$400,000	Apprn. received, \$300,000	Apprn. received, \$600,000	Apprn. requested \$200,000	Request apprn. for add. renov.
Restoration and Renovation of Buildings		Apprn. received, \$2,248,000	Apprn. received, \$2,300,000	Apprn. received, \$2,300,000	Apprn. received, \$1,125,000	Apprn. received, \$400,000	Apprn. received, \$525,000	Apprn. requested \$1,130,000	
Joseph H. Hirshhorn Museum and Sculpture Garden					Planning apprn. received, \$803,000	Apprn. received, \$2,000,000	Apprn. received, \$3,500,000	Apprn. requested \$6,897,000	

1/ First funding received in fiscal year 1963 in the amount of \$1,275,000.

RENWICK GALLERY OF ART

Mrs. HANSEN. You are requesting \$300,000 for the Renwick Gallery of Art. Justify this request.

Dr. RIPLEY. This is to complete the restoration and improvement in the interior of the Renwick Gallery in order to be able to open. I notice here, Madam Chairman, we have cited the total funds appropriated for this project that you requested. An amount of \$2,070,000 has been appropriated by the Congress and invested in the restoration and renovation of this building.

Mrs. HANSEN. The old Court of Claims Building has very interesting architecture.

Dr. RIPLEY. It is a unique building because it is the first one ever designed as a gallery of art and therefore is a historic landmark and has been so registered and designated by the Historic Preservation Trust. It also is significant because it was designed and constructed as an act of personal philanthropy, one of the first in this Nation, by Mr. W. W. Corcoran. It was designed by James Renwick, the architect of our old castle building on the Mall, who was one of the most famous architects of his time in America. On every count it is an extraordinarily interesting building, and we feel ourselves very privileged to be the eventual occupants of it.

ARTS AND INDUSTRIES BUILDING

Mrs. HANSEN. You are requesting \$500,000 for the Arts and Industries Building. Justify this request.

Dr. RIPLEY. This is to make better use of the building in its present exhibit and educational functions by constructing second floor decks. Congress has appropriated money to prepare plans and specifications for the renovation of this building, which as you recall was built in 1878 to contain the centennial exhibition objects given to the Smithsonian. It will cost \$500,000 to construct several second floor decks in high ceiling court areas and thus put to good use space that is otherwise wasted.

Mrs. HANSEN. Will this provide additional space?

Dr. RIPLEY. We will make an additional space available.

FUMIGATION FACILITY

Mrs. HANSEN. You are requesting \$75,000 for a fumigation facility project. Justify this request.

Dr. RIPLEY. This is a very important need for us, because we have many hundreds of thousands of organic specimens in the collection, plants, hides and skins, articles made from leather, bone and wood. In order to preserve them they need very careful fumigation, first when they arrive to eradicate live pests and then periodically to make sure that pests derived from eggs hatched in objects might not have survived the poison of the first fumigation. This has been done previously with a homemade facility in a very crude manner, which involves some hazard to the building and to the people doing it. It is also a violation of the building codes.

MUSEUM STORAGE AND STUDY FACILITY

Mrs. HANSEN. You are requesting \$80,000 for preparation of plans and specifications for an off-Mall central museum storage and study facility. Justify this request.

Dr. RIPLEY. This is an attempt to develop a facility off the Mall for study and storage, which would be able to use our objects that are now in rather inaccessible or difficult storage, or in dead storage in Silver Hill. We feel that the most efficient way to get at this material, to preserve it and study it both, would be to have quite a novel, new system of inline storage and accessibility which is not being done, and would require a specialized facility to be built.

FEASIBILITY STUDIES

Mrs. HANSEN. You are requesting \$100,000 for feasibility studies. Justify this request.

Dr. RIPLEY. This is an attempt to be prudent about future needs of the Institution. We feel that our complex and various programs, which are so difficult and so extensive and hard to understand for so many of the public, I may say, require that we should decide how best to set up a long-range program of construction or reconstruction or arrangement for our collections, our research, and our exhibits. We need storage retrieval methods. We need methods of cataloging and inventorying, preserving specimens. We need, of course, feasibility studies for physical facilities to accommodate research needs, in tropical biology, in astrophysical science, and in environmental and ecological studies on land now owned by the Institution, and also for new museum space to improve and expand our exhibits and educational programs.

BALANCES IN CONSTRUCTION FUNDS

Mrs. HANSEN. Please insert in the record your unobligated and unexpended balances as of June 30, 1969, and as of February 28, 1970.

(The information follows:)

CONSTRUCTION ACCOUNTS, UNOBLIGATED AND UNEXPENDED BALANCES

Account	As of June 30, 1969	As of Feb. 28, 1970
Construction and improvement, National Zoological Park:		
Unobligated balance.....	\$2,488,000	\$2,894,402
Unexpended obligations.....	475,000	281,113
Restoration and renovation of buildings:		
Unobligated balance.....	793,000	1,242,286
Unexpended obligations.....	1,717,000	613,165
Construction:		
Unobligated balance.....	13,957,000	807,965
Unexpended obligations.....	0	13,111,638
Miscellaneous construction appropriations:		
Unobligated balance.....	171,000	140,021
Unexpended obligations.....	174,000	177,702

CONSTRUCTION OF THE HIRSHHORN MUSEUM AND SCULPTURE GARDEN

Mrs. HANSEN. \$8,897,000 is requested for construction of the Joseph H. Hirshhorn Museum and Sculpture Garden. Give us a detailed description of the requirements for this funding.

Dr. RIPLEY. We will do so, Madam Chairman. I would like to point out that we believe that the full \$8 million which will consummate the contract authority may not be entirely necessary for this one year, but we are asking for it as a matter of course, in order to liquidate the contractual obligations under which it has been authorized. We believe that we will need in excess of \$5,126,000 this year.

Mrs. HANSEN. I believe you recently awarded the contract for the construction of this museum. How many bidders were there?

Dr. RIPLEY. There were three.

Mr. BRADLEY. There were three bidders and it was opened, of course, by the General Services Administration.

Mrs. HANSEN. Were the bids handled by the GSA?

Mr. BRADLEY. Yes. They are the construction agent for the Smithsonian.

COMPANIES SUBMITTING BIDS

Mrs. HANSEN. Will you please insert in the record the names of the companies that submitted bids and the name of the company that was the low bidder?

(The information follows:)

The following companies submitted construction bids, for the Joseph H. Hirshorn Museum and Sculpture Garden, which were opened on December 18, 1969:

1. Piracci Construction Co., low bidder.
2. Norair Engineering Corp.
3. Blake Construction Co., Inc.

COMPUTATION ERROR ON THE LOW BID

Mrs. HANSEN. There was a question of a computation error on the lowest bid. Describe in detail for the committee how this situation was resolved.

Dr. RIPLEY. We have the appropriate documents which we would like to enter in the record if we may, Madam Chairman.

Mrs. HANSEN. Please do.

(The information follows:)

JANUARY 21, 1970.

Mr. PAUL SHNITZER,
*Deputy Assistant General Counsel,
General Accounting Office, Washington, D.C.*

DEAR Mr. SHNITZER: Reference is made to your letter of January 12, 1970 (your reference B-167068), requesting a documented report on the protest by Norair Engineering Corp. against award to Piracci Construction Co., Inc., in an amount other than the amount of its bid on contract No. GS-03B-16254 for construction of the Joseph H. Hirshhorn Museum and Sculpture Garden.

Bids on this project were opened December 18, 1969. The base bids plus the extended unit prices for foundation piles were:

Bidder	Base bid	Extended unit price	Total
Piracci Construction Co.....	\$11,874,000	\$330,763.00	\$12,204,763.00
Norair Engineering Corp.....	14,398,000	365,277.40	14,763,277.40
Blake Construction Co., Inc.....	14,372,000	445,811.00	14,817,811.00

By telegram of December 19, 1969, the apparent low bidder advised that a mistake had been made in its bid and requested a meeting on the matter. In oral statements at the meeting and letters dated December 22 and 29, 1969, the Piracci firm and its lawyer reiterated the assertion of a mistake and requested

correction of the bid. The alleged error occurred when, through a clerical misunderstanding, the figure of \$754,375 for exposed Swenson pink granite aggregate mix was erased and the remaining materials figures on page 6 of the computations for poured-in-place concrete were added together, carried forward and finally incorporated into the recapitulation sheet without the figure that had been erased. See enclosed letters for more detailed explanation. The original worksheet which the Piracci firm submitted to the General Services Administration tends to bear out the explanation. In addition, examination of the 11 sheets of estimates on the poured-in-place concrete makes no other provision for the material deleted as a result of the misunderstanding and consequent erasure of the extended figure for the 5,000 number concrete. GSA's estimate on this item of material was 5,739 cubic yards at \$131.28. Both the quantity and the price correspond closely to the bidder's figures. Accordingly, the bidder appears to have submitted clear and convincing evidence that a mistake was, in fact, made in preparing the bid.

On the question of the bid actually intended, Piracci's attorney has offered only the proposition that the omitted figure plus .0065 thereof (erroneously expressed as .065) representing bond premium adjustment be added to the bid actually submitted. However, we find no evidence that the figure resulting from such an adjustment would have been the bid submitted had there been no error.

On the other hand, the bid estimate sheets submitted in support of the allegation of mistake fulfill the requisite evidentiary requirement. The bid actually intended can be ascertained by reinserting the \$754,375 at the point where it should have appeared on page 6 of the cast-in-place concrete computations, retotaling the page, carrying the correct total forward to page 10, finding the correct total of all the cast-in-place concrete estimate sheets, making the adjustments as shown on page 11, rounding off to the nearest \$10,000 (as was done by the bidder originally), carrying the corrected figure forward to the recapitulation sheet, computing the new total, deducting therefrom the cuts of \$280,000, and finally adding the lump-sum fee of \$500,000. This, we believe, is clearly what the bidder would have done in computing its overall bid if the erroneously erased \$754,375 had not been erased and, therefore, the resulting figure represents what the bid would actually have been but for the mistake. Enclosed (enclosure I) is a set of the original worksheets on which the recomputation, following the bidder's method of calculation, is shown in pencil.

In connection with this reconstruction of what the bid would have been from the evidence furnished, several facts need to be pointed out. The standard premium for construction bonds is \$10 per \$1,000 on the first \$100,000 (or a total of \$1,000); \$6.50 per \$1,000 on the next \$2,400,000 (or a total of \$15,600); \$5.25 on the next \$2,500,000 (or a total of \$13,125); \$5.00 on the next \$2,500,000 (or a total of \$12,500); \$4.70 per \$1,000 on everything over \$7,500,000; plus 1 percent of the aggregate of the foregoing for each month by which the project will exceed 24 months. On the foregoing basis, the bond premium would be computed as follows for both the erroneous original bid and for the bid as corrected:

	Original bid	Corrected bid
1st \$1,000.....	\$1,000	\$1,000
Next \$2,400,000.....	15,600	15,600
Next \$2,500,000.....	13,125	13,125
Next \$2,500,000.....	12,500	12,500
All above \$7,500,000.....	19,194	22,720
Subtotal.....	61,419	64,945
Plus 1 percent times 6 months.....	3,685	3,897
Total premium.....	65,104	68,842

In the original bid, the total bond premium was apparently rounded off to the nearest \$10,000, for a figure of \$70,000 was included on the recapitulation sheet. Applying the same method to corrected bid figures, the amount included for bond premium would not change.

It will also be noted that the \$280,000 shown at the bottom of the recapitulation sheet represents "cuts" for reduced prices received from subcontractors after the bid costs had already been calculated on the basis of earlier quotations

and is not a fee as might be supposed. The derivation of these cuts of \$280,000 is indicated in the documentation furnished by the bidder. Note also that in subtracting the \$280,000, Piracci dropped the last three figures before arriving at his final bid price of \$11,874,000 by adding on a lump-sum figure of \$500,000 profit and overhead (not shown step by step on the recapitulation sheet but only as a resulting total identical to the amount bid).

By reinserting the figure erased from page 6 of the poured-in-place concrete computations and following through the remainder of the bid computation in the manner which was apparently followed by the bidder, it appears to us that the amount the bid would have been but for the mistake is readily and clearly ascertainable from the evidence submitted and is thus subject to correction under the provisions of FPR 1-2.406-3(a) (2). Since the bid, as thus recomputed, is still far below that of the next bidder, it is recommended that correction thereof be approved as outlined. A somewhat similar (albeit much simpler) matter of recomputation on the basis of the bidder's own method of calculation was involved in Comptroller General's Decision B-161489 of June 23, 1967. There, the bidder had a figure of \$75,000 in detail estimate sheets which was brought forward into the summary sheet as \$7,500. GSA had approved correction of the bid on the basis of bringing the correct figure forward into the summary and (following the bidder's original method of computation), finding a new total of all costs, adding 10 percent thereof for profit and overhead, and rounding off the result to the nearest thousand. Your office found no reason to overturn that determination. Accordingly, it is recommended that Piracci be permitted to amend its bid as herein indicated and that the protest of Norair Engineering Corp. be denied.

Enclosed (as listed on the attachment) are documents pertinent to this matter. Please return these documents when they have served your purposes.

The bids expire on February 1, 1970, and the wage rate determination expires on February 24, 1970. We consequently request your expedited consideration of this matter.

Sincerely,

HART T. MANKIN, *General Counsel.*

Concurrence :

Assistant General Counsel, Public Building Division.

Commissioner, Public Buildings Service.

LIST OF ENCLOSURES

- A. Specifications and bid forms, vol. I of III, together with amendments 1 through 5.
- B. Bid of Piracci Construction Co., Inc.
- C. Abstract of bids.
- D. Bid comparison tabulation.
- E. Telegram of December 19, 1969, from Piracci Construction Co., Inc., alleging mistake in bidding.
- F. Letter of December 22, 1969, from attorney for Piracci Construction Co., Inc., explaining how the error occurred and forwarding partial supporting documentation.
- G. Additional compensation (bid estimate sheets) furnished.
- H. Letter of December 29, 1969, from attorney for Piracci Construction Co., Inc., explaining how the lump sum for profit and overhead is derived for bidding purposes.
- I. Set of bid estimate sheets with penciled notations showing recomputation of bid on basis of correcting the error alleged.

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington, D.C., February 10, 1970.

HON. ROBERT L. KUNZIG,
Administrator,
General Services Administration.

DEAR MR. KUNZIG: Reference is made to a letter dated January 21, 1970, signed by your General Counsel, furnishing a report on the protest of Norair Engineering Corp. on contract No. GS-03B-16254 for the construction of the Joseph H. Hirshhorn Museum and Sculpture Garden.

Enclosed is a copy of our decision of today denying the protest. Your documents are returned as requested.

Sincerely yours,

R. F. KELLER,
Assistant Comptroller General of the United States.

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington, D.C., February 10, 1970.
B-167068

MATZKIN & DAY,
Washington, D.C.

(Attention Sheldon I. Matzkin, Esq.)

GENTLEMEN: Reference is made to your letter of January 28, 1970, protesting on behalf of Norair Engineering Corp., the proposed award of a contract for the construction of the Joseph H. Hirshhorn Museum and Sculpture Garden, General Services Administration project No. 49356, contract No. GS-03B-16254, to Piracci Construction Co., Inc., if the award is in an amount other than the amount of its original bid.

Bids were opened on December 18, 1969. The base bids were as follows:

Bidder:		Base bid
Piracci Construction Co.	Corrected \$ 12,628,375	\$11,874,000
Norair Engineering Corp.		14,398,000
Blake Construction Co., Inc.		14,372,000

By telegram dated December 19, 1969, Piracci notified GSA that a mistake had been made in its bid. The alleged mistake occurred when, due to a clerical error, the figure of \$754,375 for exposed swenson pink granite aggregate mix was erased from page 6 of Piracci's estimate sheets and the remaining materials figures on the page which represented computations for poured-in-place concrete were added together, carried forward, and finally incorporated into the recapitulation sheet without including the figure that had been erased. It is reported that the erasure occurred when, because of several changes in the quantities for this material during final analysis review, several erasures were made, weakening and tearing slightly the paper at this particular line on the worksheet. For this reason the final quantity and price for this item were dropped one line on the sheet. Thereafter, this worksheet among others was given to a bookkeeper of the company who was instructed to add the various columns of figures to arrive at a total price for the concrete work. Because of the break in the column caused by dropping down one line, the bookkeeper erroneously assumed that the \$754,375 figure represented a total of the figures in the column that preceded it. According to the bookkeeper's affidavit, she then erased the figure and retotalled the column, substituting the new total in the amount of \$438,009. The quantity of 5,702 cubic yards and the unit price of \$132.30 which resulted in the erased figure rounded to the nearest dollar remain on the estimate sheet.

GSA is of the opinion that the original worksheets submitted by Piracci accompanied by affidavits of the company's estimator and the bookkeeper who made the alleged error substantiate Piracci's allegation. GSA points out that the 11 sheets of estimates made no provision for the swenson mix deleted as a result of the clerical misunderstanding and consequent erasure of the extended figure for the material. In addition to the worksheets forwarded here by GSA, Piracci, through its attorney, submitted directly to this office a letter dated December 18, 1969, from a proposed subcontractor to Piracci, furnishing the price quotations for materials upon which Piracci relied in preparing its bid. GSA's estimate on this item was 5,739 cubic yards at \$131.28 per yard. Both the price and quantity correspond closely to the bidder's figures allegedly omitted in error. GSA concludes that the bidder appears to have submitted clear and convincing evidence that a mistake was made by it in preparing its bid.

In regard to an alleged error in bid, we have held that to permit correction prior to award a bidder must submit clear and convincing evidence that an error has been made, the manner in which the error occurred, and the intended bid price. B-164620, September 3, 1968, and cases cited therein. The same basic

requirements for the correction of a bid are also found in section 1-2.406-3(a) (2) of the Federal Procurement Regulations which provide as follows:

"(2) A determination may be made permitting the bidder to correct his bid when the bidder requests permission to do so and clear and convincing evidence establishes both the existence of a mistake and the bid actually intended."

We are satisfied that the evidence described above establishes the existence of the alleged mistake. Further, the bid actually intended can be ascertained by reinserting the \$754,375 at the point where it should have appeared on page 6 of the worksheets (cast-in-place concrete computations), carrying the correct total through to the recapitulation sheet, and as was done originally, deducting the cuts of \$280,000 and adding the lump-sum fee of \$500,000.

The resulting base bid price from the above calculations is \$12,628,375. (The original base bid of \$11,874,000 plus the \$754,375 correction.) GSA reports, and Piracci has stipulated, that the amount included in the bid for bond premium had been rounded off up to the nearest \$10,000 and consequently would be unchanged by correcting the error.

Regarding the \$500,000 lump-sum fee which represents profit and overhead, Piracci reports that this figure was reached prior to final pricing. They state that the error involved exclusively the cost of exposed aggregate material only and did not include the cost of labor and, therefore, would not increase risk and, in and of itself, would not have required an increase in overhead and profit. We do not feel that we would be justified in rejecting Piracci's contention that the profit and overhead figure would have not been affected by the increase in material costs in this case. It also may be noted that, even assuming the overhead and profit figure would have been affected by the correction, the maximum that the bid could have been is still nearly \$1,750,000 below the next lowest bid, and that, therefore, correction of the bid would not be prejudicial to the other bidders. B-123888, May 9, 1955. We have specifically held that correction may be permitted to reflect the omission of direct costs without any increase for profit where the bidder requests correction in such form and the bid would remain low whether or not the low bid is amended to reflect the profit. B-149798, September 7, 1962.

We note, however, that the bid prices for the alternates and unit prices found on the supplement to standard form 21 might be affected by the correction in the base bid to reflect the intended material price. This is especially true with respect to the deductive amount applicable to alternate E for omitting the entire Sculpture Garden and associated work north of the south curb line at Jefferson Drive. We think there is considerable substance to your expressed position that if the contract were awarded with the deduction of alternate E, the deductive amount should be adjusted to reflect the correction in the base bid.

Based on the foregoing, we are of the opinion that the bid of Piracci may be corrected as specified above. Accordingly, your protest is denied.

Very truly yours,

R. F. KELLER,

Assistant Comptroller General of the United States.

Dr. RIPLEY. These include the letter from the GAO authorizing the GSA to proceed and accept the bid.

Mrs. HANSEN. That was a strange mistake.

Dr. RIPLEY. Apparently it does happen. It was a perfectly authentic mistake. It was a question of addition. There was an erasure. This girl didn't know her actual failure to include the last figure.

(Discussion off the record.)

AWARD OF THE CONTRACT TO THE PIRACCI CO.

Mrs. HANSEN. Please insert in the record the document that awarded the contract to the Piracci Co.

(The information follows:)

FEBRUARY 12, 1970.

PIRACCI CONSTRUCTION Co., INC.,
Baltimore, Md.

GENTLEMEN: Your lump-sum bid dated December 18, 1969, in the corrected amount of \$12,628,375, together with add alternates A, B, C, and D for a total of \$840,000, as well as the unit price—Foundation piles, \$11.50 per linear foot

(product being \$330,763), totaling overall \$13,799,138 (GS-03B-16254) for construction of the Joseph H. Hirshhorn Museum and Sculpture Garden, Smithsonian Institution, Independence Avenue, Seventh to Ninth Streets SW., Washington, D.C., is accepted. The unit price of \$20 for increase or decrease in the quantity of gallery partitioning is also accepted.

Three sets of the contract are enclosed. "Copy for contractor" is to be retained by you. Return two completely executed sets within 15 calendar days after receipt.

Your attention is called to the enclosed Sales Tax Bulletin No. 18, and also to the enclosed GSA form 1015 outlining suggestions for you to follow should the contract completion date be exceeded.

Please date, sign, and return the set of drawings being forwarded under separate cover.

Sincerely,

H. F. OFFENBACHER,

*Chief, New Construction Branch, Design and Construction Division,
Contracting Officer.*

Three bids opened December 18, 1969.

Lowest (corrected lump sum bid) together with alternates A, B, C, and D accepted: BB

Corrected lump-sum bid.....	\$12,628,375
Alternate "A" add.....	210,000
Alternate B add.....	130,000
Alternate C add.....	20,000
Alternate D add.....	480,000
Total	13,468,375
Foundation piles \$11.50 per linear foot.....	330,763
Total	13,799,138

Specifications dated PB-REG-3 November 5, 1969.

Amendments Nos. 1, 2, 3, 4, and 5 thereto dated November 18, December 2, 5(2), and 8, 1969, respectively.

Completion: Within 915 calendar days from date of receipt of notice to proceed.

Appropriation:

R3.568.X-X.81141.251.49356	\$12,799,138
R3.472.X-X.81141.251.49356	1,000,000
Total	13,799,138

Liquidated damages in specifications \$940 per c.d.

ADEQUACY OF FUNDS FOR CONSTRUCTION

Mrs. HANSEN. Do you have sufficient funds to construct the Hirshhorn Museum?

Mr. BRADLEY. Yes, Madam Chairman.

Mrs. HANSEN. The accepted bid exceeded the total authorization by about \$1 million. How did you resolve this situation?

Mr. BRADLEY. Madam Chairman, we have letters that perhaps should be included in the record, if you please, that outline this entire event. Included is a response from Mr. Hirshhorn advising that he would put up the \$1 million for construction, in order to make it possible for us to tell the General Services Administration to proceed with the combination of appropriated funds totaling \$15 million and up to \$1 million from Mr. Hirshhorn's private funds as a donation to construction.

LEGAL OPINION ON INTERMINGLING PUBLIC AND PRIVATE FUNDS

Mrs. HANSEN. Do you have a legal opinion on the legality of intermingling private funds and public funds for the construction?

Mr. BRADLEY. We do not have a formal one, but we can certainly get it.

Mrs. HANSEN. Please insert in the record the legal opinion on the legality of this procedure.

Mr. BRADLEY. Yes. I assure you we had many informal discussions before we proceeded.

(The information follows:)

USE OF SMITHSONIAN TRUST FUNDS AS WELL AS APPROPRIATED FUNDS FOR CONSTRUCTION OF THE JOSEPH H. HIRSHHORN MUSEUM AND SCULPTURE GARDEN

The Smithsonian Institution is a unique educational establishment incorporated by Congress in 1846 to carry out the trust responsibilities of the United States "for the increase and diffusion of knowledge among men" and to administer the Smithsonian bequest independent of the Government itself. The Institution, under its authority "to receive money or other property by gift, bequest, or devise, and to hold and dispose of the same in promotion of the purposes thereof" (20 U.S.C. 55), has received substantial additions to this basic governmental endowment (sometimes referred to as Smithsonian "trust funds" or "private funds"). These additions have included not only money and securities, but all sorts of real and personal property.

For 124 years, these trust funds have been used for all the varied purposes of the Institution, including construction, as necessary and appropriate. The original Smithsonian building and the Freer Gallery are major examples of construction carried out with trust funds.

During its first few years the Institution was built and operated entirely with endowment income. Starting in 1858, Congress has supplemented this income with direct annual appropriations to provide for the growth of the Institution's educational programs, including construction of many of the buildings necessary therefor. (See, for example, act of June 28, 1955, 69 Stat. 189, authorizing the construction, for the Smithsonian, of the Museum of History and Technology.)

Thus, there is ample precedent and authority for the use of both appropriated funds and trust funds for the construction of Smithsonian buildings. When the Joseph H. Hirshhorn Museum and Sculpture Garden was authorized both as a building and an activity, by Public Law 89-788, a combination of public and private funds was contemplated from the start: a Federal contribution of up to \$15 million for basic construction, and a private contribution of \$1 million for purchase of additional works of art for the museum. When building costs rose about twice as fast as reasonably contemplated in 1966, the Institution decided not to exercise its prerogative to ask for the additional funds from Congress, but instead determined to use private funds contributed by the donor of the collection. With the agreement of the General Services Administration, which has the delegated responsibility for the construction project as a whole, these additional funds have now been committed to the building contract. This result is not only within the traditional practice and authority of the Institution, but also is further evidence of the generosity and good faith of the donor.

APRIL 22, 1970.

PETER G. POWERS,
General Counsel,
Smithsonian Institution.

COST PER SQUARE FOOT FOR CONSTRUCTION

Mrs. HANSEN. How many square feet will be in the museum and what will it cost per square foot for construction?

Mr. BRADLEY. There will be in the museum a total of 168,000 square feet in the Hirshhorn Museum proper as distinguished from the sculpture garden. The cost per square foot, I think, requires a little analysis in order to separate out the sculpture garden for which the bidders

varied from \$1 million to \$1,995,000. This was an alternate. We had a separate price on the garden. Some bid \$1 million and some bid nearly \$2 million, so we are going to have to size up how much fairly should be subtracted from the total bid in order to get to the building that has the square footage in it. We may do that readily, of course.

Mrs. HANSEN. Please do.

(The information follows:)

COST OF THE HIRSHHORN MUSEUM PER SQUARE FOOT

The cost of the Hirshhorn Museum and Sculpture Garden is itemized below:	
Museum building (contract)-----	\$12, 799, 138
Sculpture garden (contract)-----	1, 000, 000
Design and supervision (estimate)-----	1, 554, 200
AFIP relocation (estimate)-----	200, 000
Contingencies (estimate)-----	717, 662
Total project cost-----	16, 271, 000

The gross floor area of the building is 168,000 square feet.

The total project cost without the sculpture garden would be \$15,271,000. That amount divided by 168,000 square feet gives a cost of \$91 per square foot.

ARCHITECT FOR THE HIRSHHORN MUSEUM

Mrs. HANSEN. Who is the architect for this museum?

Dr. RIPLEY. Gordon Bunshaft of Skidmore, Owings & Merrill.

Mrs. HANSEN. How was he selected?

Dr. RIPLEY. He was selected by the Smithsonian and Mr. Hirshhorn together, in concert.

Mrs. HANSEN. Please insert in the record a listing of some of the projects Mr. Bunshaft has designed which would indicate his competence as a recognized architect.

Dr. RIPLEY. We will do that, Madam Chairman.

(The information follows:)

PROJECTS DESIGNED BY MR. GORDON BUNSHAFT OF SKIDMORE, OWINGS, & MERRILL

The following is a list of major projects designed by the New York office of the architectural firm of Skidmore, Owings & Merrill, of which Mr. Gordon Bunshaft is in charge:

- Lever House Office Building, New York City.
- Manufacturers Hanover Trust Bank, New York City.
- Istanbul Hilton Hotel, Istanbul, Turkey.
- Connecticut General Life Insurance Co., Bloomfield, Conn.
- Reynolds Metal Co., Richmond, Va.
- Chase Manhattan Bank, New York City.
- First City National Bank, Houston, Tex.
- Albright-Knox Art Gallery, Buffalo, N.Y.
- Beinecke Rare Book and Manuscript Library, Yale University.
- Bank Lambert, Brussels, Belgium.
- Marine Midland Building, New York City.
- Number One Main Place, Dallas, Tex.
- American Can Co., Greenwich, Conn.

The firm of Skidmore, Owings & Merrill has received more first honor awards for excellence from the American Institute of Architects than any other firm in the United States and over two-thirds of those awards have been received by the New York office under Mr. Bunshaft.

CONSTRUCTION COSTS FOR THE HIRSHHORN

Mrs. HANSEN. The new annex to the National Gallery of Art was designed by I. M. Pei according to information received by the committee. We understand the construction costs for that structure are estimated at \$100 per square foot. How do you reconcile this estimate with the current estimate of construction costs for the Hirshhorn Museum?

Mr. BRADLEY. May we supply a statement on that for the record? I would certainly want to check with my conferees over at the Gallery to make sure we know what their cost per square foot is.

Mrs. HANSEN. Please do.
(The information follows:)

COMPARISON OF THE HIRSHHORN BUILDING COSTS WITH THE PROPOSED NEW NATIONAL GALLERY OF ART BUILDING

Information obtained from the National Gallery of Art on the status of their planning and cost estimating follows:

Preliminary plans will be submitted to the Trustees next month. It is expected that the working drawings to be used for the construction contract will be completed at about the beginning of the next calendar year (1971). Because the plans are incomplete and also because of the uncertainty of building construction cost levels at the beginning of 1971, the Gallery considers its preliminary cost estimates to be tentative and subject to change. Accordingly, the Smithsonian Institution is unable to make the requested comparison of costs.

The Hirshhorn Museum and Sculpture Garden is under contract and construction work is in progress. The contract price and estimates of other elements of total cost are given above.

SUMMARY JUSTIFICATION MATERIAL

Mrs. HANSEN. Please insert pages E-1 through E-7 of the justifications in the record at this point.

(The pages follow:)

SMITHSONIAN INSTITUTION

"SALARIES AND EXPENSES"

Report on the Number of Permanent Positions by Organization Unit

Unit	1969 Actual	1970 Estimate	1971 Estimate	Increase 1970 over 1969
United States National Museum.....	210	214	217	+ 3
National Museum of History and Technology	154	155	155	0
National Museum of Natural History.....	258	258	268	+ 10
National Air and Space Museum	41	41	45	+ 4
National Zoological Park	0	0	252	+252
National Armed Forces Museum Advisory Board.....	7	7	7	0
Anacostia Neighborhood Museum	4	8	12	+ 4
Freer Gallery of Art.....	7	7	7	0
National Collection of Fine Arts.....	56	56	60	+ 4
National Portrait Gallery.....	27	27	27	0
Joseph H. Hirshhorn Museum and Sculpture Garden	7	13	20	+ 7
Smithsonian Astrophysical Observatory ...	54	57	57	0
Smithsonian Tropical Research Institute...	23	38	43	+ 5
Radiation Biology Laboratory.....	32	36	40	+ 4
Office of Ecology	5	5	8	+ 3
Office of Oceanography and Limnology	18	18	26	+ 8
Center for the Study of Man.....	1	2	5	+ 3
Center for Short-Lived Phenomenon	0	0	1	+ 1
Office of Academic Programs.....	17	18	20	+ 2
American Revolution Bicentennial	0	0	5	+ 5
Environmental Sciences Program	0	0	14	+ 14
International Activities	15	15	15	0
Woodrow Wilson International Center for Scholars.....	0	2	0	- 2
Administrative and Central Support Activities.....	237	243	267	+ 24
Buildings Management Department.....	827	857	877	+ 20
GRAND TOTAL.....	<u>2,000</u>	<u>2,077</u>	<u>2,448</u>	<u>371</u>

SMITHSONIAN INSTITUTION
"Salaries and Expenses"

Report of Obligations by Objects

	1969	1970	1971	Increase or
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	Decrease (-)
				'71 over '70
11 Personnel Compensation..	\$17,368,000	\$19,570,000	\$23,181,000	\$3,611,000
12 Personnel Benefits.....	1,290,000	1,471,000	1,758,000	287,000
21 Travel and Transportation of Persons.....	277,000	334,000	466,000	132,000
22 Transportation of Things..	218,000	198,000	250,000	52,000
23 Rent, Communications, and Utilities.....	1,596,000	1,928,000	2,423,000	495,000
24 Printing and Reproduction	515,000	597,000	724,000	127,000
25 Other Services.....	2,779,000	2,915,000	3,773,000	858,000
26 Supplies and Materials....	857,000	1,048,000	1,707,000	659,000
31 Equipment.....	1,407,000	1,446,000	2,023,000	577,000
41 Grants.....	8,000	58,000	62,000	4,000
42 Insurance Claims and Indemnities.....	<u>-1,000</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Obligations.....	\$26,316,000	\$29,565,000	\$36,367,000	\$6,802,000
<u>Appropriation Adjustments:</u>				
Receipts and Reimbursements from Federal funds.....	-6,000	0	0	0
Unobligated balance lapsing..	+29,000	0	0	0
Transferred to other accounts	<u>+103,000</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>Appropriation or estimate...</u>	<u>\$26,443,000</u>	<u>\$29,565,000*</u>	<u>36,367,000</u>	<u>\$6,802,000</u>

*Includes anticipated supplemental
of \$1,431,000.

SMITHSONIAN VISITORS
(By fiscal year)

Fiscal Year	Smithsonian Institution Building	Arts and Industries Building	Museum of Natural History	National Air and Space Building	Freer Gallery of Art	Museum of History and Technology	Fine Arts & Portrait Gallery	Total ^{8/}
1961	1,024,526	2,912,371	2,047,973	987,858	130,746	(1)	(3)	7,103,474
1962	1,222,112	3,471,050	2,113,053	1,986,319	130,597	(1)	(3)	8,923,131
1963	1,630,280	3,534,182	2,288,397	2,673,618	183,359	(1)	(3)	10,309,836 ^{2/}
1964	1,311,061	2,457,243	2,512,306	1,854,186	168,625	2,509,774 ^{1/}	(3)	10,813,195 ^{2/}
1965	1,065,635	2,028,175	3,051,472	1,705,683	210,972	5,091,776	(3)	13,153,713
1966	870,010	1,746,715	2,988,006	1,494,922	222,089	4,829,112	(3)	12,150,854
1967	1,020,312	1,638,873	3,409,957	1,484,422	212,920	5,546,102	(3)	13,312,586 ^{4/}
1968	847,176	1,344,622	3,257,957	1,123,698	169,533	4,750,023	30,888	11,523,897 ^{4/}
1969	275,259 ^{2/}	1,493,141 ^{5/}	2,916,749	1,225,959	179,374	4,174,071	166,177	10,430,730 ^{2/}

1/ Museum of History and Technology opened January 1964.

2/ July-August 1964, certain Smithsonian Institution buildings were open 4:30 to 10 p. m. for the first time.

3/ National Collection of Fine Arts opened May 1968.

4/ Reflects the significant decrease in visitors to the Nation's Capital in the first six months of CY 1968, due to unsettled local conditions.

5/ Building closed for renovation October 1968.

6/ Since the first display of the lunar sample in September 1969, visitors to this building have averaged approximately 270,000 per month (2,532,000 on an annual basis).

7/ Fiscal year 1969 visitor totals represent the effect of local conditions in late 1968 on visitor attendance. During CY 1969, a total of 12,438,909 visitors came to the Smithsonian, an increase of 25 percent over CY 1968.

8/ An additional 5,000,000 visitors visit the National Zoological Park annually.

SMITHSONIAN INSTITUTION

Multiyear Projections of Selected "Outputs"
By Program Category

<u>Program Category</u>	Actual					Estimated				
	1969	1970	1971	1972	1973	1974	1975			
I. Research and Scholarship										
Cooperative Ph.D.'s completed at Smithsonian.....	55	60	70	75	80	100	115			
Postdoctoral investigators.....	45	55	65	80	110	135	165			
Smithsonian-University cooperative graduate fellowships	2	3	5	10	15	25	30			
II. Growth of National Collections (Number of specimens in the Smithsonian's museums and galleries) (in millions)	670	69.0	72.0	73.0	740	760	780			
III. Public Education and Enlightenment										
A. Number of visitors (Mall facilities exclusive of National Gallery of Art) (in millions)	104	14.3	16.8	17.0	180	190	195			
B. Organized visitation programs										
Secondary school visits (in thousands).....	112	12.0	15.0	18.5	235	315	390			
Primary school visits (in thousands).....	380	47.0	60.0	75.0	940	1270	1570			

SIGNIFICANT EXHIBITS, FISCAL YEAR 1969

National Museum of Natural History

"Masada" The Indomitable Major John Wesley Powell	Jean Louis Berlandier--A French Scientist Yorba Textiles
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National Museum of History and Technology

"The Quest for the Presidency" Inaugural Medal Display "High School Graphics" Edgar Dorsey Taylor drawings Imogen Cunningham exhibit "The Coke Push" Cotton Gin display "Patent Controversies in the History of Radio"	"Hail to the Chief" Josiah K. Lilly coin collection Raphael Soyer lithograph display "Woman, Cameras, and Image" "The Lingering Shadow" "Abandoned Mine Scenes" "Bible Quilt" display "Human Rights Year" "Stamps of Malta"
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Anacostia Neighborhood Museum

Jazz show Makonde sculpture	The Sage of Anacostia
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Division of Performing Arts

Folklife Festival Summer in the Parks	Puppet theatre "Perceptions"
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National Collection of Fine Arts

Alexander Archipenko The Roy R. Neuberger Collection "The Figurative Tradition in Recent American Art" "European Painters Today" Yasuo Kuniyoshi	WPA Prints Charles Sheeler The Graphic Art of Winslow Homer" Rico Lebrun "The American Poster"
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National Portrait Gallery

"This New Man--A Discourse in Portraits" "Time"	A 19th Century Gallery of Distinguished Americans
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Cooper-Hewitt Museum

"Early 20th Century Posters" Paintings by Winslow Homer Sketches by Frederic Edwin	"Counterchange and New Color" "Contemporary Japanese Posters" "A Treasury of Design"
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National Air and Space Museum

NC-4 Transatlantic Flight display Lunar Sample display	X-15 display Apollo display
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CONTRACTS AND GRANTS TO THE SMITHSONIAN INSTITUTION
Fiscal Years 1969 and 1970

<u>Contracts</u>	<u>1969</u>	<u>1970</u>	<u>Grants</u>	<u>1969</u>	<u>1970</u>
National Aeronautics and Space Administration					
Historical Artifacts	\$11,969	0			
Interdisciplinary Communication ..	149,990	\$199,606	Satellite Tracking Program ..	\$4,610,297	\$2,200,000
Geodetic Satellite Analysis	105,715	0	Recovery of Meteorites	150,000	0
Radio Meteor Research	492,000	250,000	Miscellaneous	140,780	89,980
Celescope	767,000	847,000			
Miscellaneous	216,585	227,640			
	<u>\$1,743,259</u>	<u>\$1,524,246</u>		<u>\$4,901,077</u>	<u>\$2,289,980</u>
Department of Defense					
Pacific Birds Program	\$190,080	0	Tropical Forest Ecology	\$50,894	0
Mosquitoes in Southeast Asia	131,800	\$161,895			
Diseases in Overseas Areas	155,068	39,000			
Mammalian Parasites	91,299	100,937			
Miscellaneous	384,966	299,237			
	<u>\$957,233</u>	<u>\$601,069</u>			
Department of Health, Education, and Welfare					
			Ecology & Behavior of Primates	\$16,436	0
			Cancer of the Pelvic Region ..	19,676	0
			Human Osteon Chemistry	72,506	0
			Curricula in Environmental		
			Design	11,411	0
			Postdoctoral in Education	15,047	0
				<u>\$135,076</u>	<u>0</u>
Atomic Energy Commission					
Protein Properties	\$15,634	0			
Radiation & Plant Metabolism	64,202	0			
	<u>\$79,836</u>	<u>0</u>			

<u>Contracts</u>	<u>1969</u>	<u>1970</u>	<u>Grants</u>	<u>1969</u>	<u>1970</u>
			National Science Foundation		
Processing Antarctic Collections...	\$90,764	\$140,640	Taxonomic Study.....	\$18,900	0
Science Information Exchange.....	1,800,000	1,600,000	Papers of Joseph Henry....	30,000	0
Miscellaneous.....	18,000	0	Marine Technician Program	25,000	0
			Taxonomy of Grasses.....	12,000	0
	\$1,908,764	\$1,740,640	Undergraduate Research	35,070	0
			Program.....	0	\$125,978
			Miscellaneous.....		
				\$120,970	\$125,978
Miscellaneous.....	\$95,326	0	National Institutes of Health		
			Miscellaneous.....	0	\$259,000
Miscellaneous.....	\$22,780	0	Department of the Interior		
			Other		
Miscellaneous.....	\$102,750	\$204,728	Miscellaneous.....	\$25,110	\$85,587
Total, Contracts...	\$4,905,928	\$4,070,683	Total, Grants...	\$5,233,127	\$2,760,545

SMITHSONIAN MAGAZINE

Mrs. HANSEN. The Smithsonian Institution is publishing a new magazine called the Smithsonian. Give us the details on this project.

Dr. RIPLEY. We would like to insert the details in the record if we may.

(The information follows:)

The Smithsonian magazine has been established primarily to extend the Smithsonian Associates into a nationwide public membership group. The magazine is offered as part of national membership in the Associates, which organization has heretofore been developed very successfully on a regional or Washington-area basis. Smithsonian is being issued monthly; there are no newsstand or other commercial sales. As with all activities of the Smithsonian Associates, the magazine is privately funded.

The magazine already gives promise of becoming the Institution's principal instrument for presenting the Smithsonian's traditional concerns and research interests to a large national audience. The first or April issue is currently in the mails; circulation has reached 180,000 at the time of writing and is expected to reach 200,000 very soon.

Although Smithsonian will reflect all of the Institution's subject area interests, it will seek to bind these interests into the central theme of the current condition of man—his environment, sciences, arts, adventures, follies and fortunes. Writers and topics for the first issue included Pulitzer Prize winner Dr. Rene Dubos on the current condition of man, Russell Lynes on the Metropolitan Museum's 100th anniversary, National Zoological Park research scientist Dr. John Eisenberg on the restoration of Ceylonese elephants, and Dr. Jon N. Weber on the infestation of Pacific coral reefs by the crown-of-thorns starfish.

The Smithsonian magazine staff is headed by Edward K. Thompson, who comes to the Smithsonian after 18 years as Managing Editor and Editor of *Life*. With Mr. Thompson on the board of editors are Ralph T. Backlund, formerly Associate and Managing Editor of *Horizon Magazine*; R. Hobart Ellis, who has served as editor of various scientific publications, including *Nucleonics*, *Nuclear Fusion and Physics Today*; Edwards Park, formerly editor of several magazines in Australia and Associate Director of the National Geographic's book department; and Mrs. Grayce P. Northcross who has done research and reporting for *Time*, *Life*, and *USIA's America* and most recently served as Text Editor of *Topic*.

WOODROW WILSON INTERNATIONAL CENTER FOR SCHOLARS

Mrs. HANSEN. What is the current status of the Woodrow Wilson International Center for Scholars? You are not requesting any funds in this budget for the Center.

Dr. RIPLEY. We had asked the Bureau of the Budget for a sum of money.

(Discussion off the record.)

Mrs. HANSEN. I am startled that there are not any funds in this budget for the Center in view of President Nixon's deep interest in Woodrow Wilson as a scholar, and as a President.

Dr. RIPLEY. Dwight Eisenhower Memorial College received some money recently as I understand it from the Congress.

Mrs. HANSEN. Is it in the budget?

Dr. RIPLEY. We requested \$934,000 in the President's budget for fiscal year 1971 for the Woodrow Wilson Center. Part of this is for the Center's postdoctoral program. Additional funds are to be sought from private sources. The balance of the requested funding is for administrative support, including program staff, equipment, and furnishings. No funds were provided in the President's budget allowance to the Smithsonian Institution.

DIVISION OF PERFORMING ARTS

Mrs. HANSEN. You have budgeted \$221,000 for the Division of Performing Arts. Please describe your program plans in this connection for 1971.

Mr. BRADLEY. Of course.

Dr. RIPLEY. Would you like us to put that in the record?

Mrs. HANSEN. Please discuss it now.

Dr. RIPLEY. We requested an increase of two positions and \$50,000 for the Division of Performing Arts, that is for the next fiscal year. This consists of the following items: Program support funds in the amount of \$27,000 are requested to design and produce the American Folklife and American College Theater Festivals. The Folklife Festival was attended by 618,000 persons in July 1969, and the College Theater Festival was very successful as a forum for the best achievements of 10 of the Nation's colleges and universities. In both cases we require funds for staging, equipment rental, supplies, and related production costs. Two additional clerical assistants at \$12,000, and funds for contractual services at \$11,000 are required to permit the division to provide technical assistance and advice to State groups and other organizations interested in producing folk, craft, and similar performances.

Mr. WARNER. Madam Chairman, did you mean by your question that you want more description of what we will be doing this year in the way of programs?

Mrs. HANSEN. Yes.

Mr. WARNER. I would like to say, Madam Chairman, that for the next year we are reducing our performing arts program in general, and we are not having any theatrical attractions that are possibly competitive with commercial theater. We are not having a summer musical comedy series which was the one where we used non-Equity companies last year. Of course, we did consult with Equity, but they did not allow us to use a split company. We will not have that this summer. Our principal activities for the coming year include the Folklife Festival in July. We are also undertaking at no cost to us a jazz festival for the National Capital Parks department of the Department of Interior but that will be fully funded by them. We will go ahead only on that basis. We will continue with the puppet theater, which is a good self-liquidating proposition. We are preparing for the Bicentennial and trying to make a better Folklife Festival. We do on our private side give a certain number, not so much of plays or theater in the usual sense, but rather of unusual concerts, and dance groups for our associates. This is by subscription to our privately funded membership organization.

So the three program elements that we are now pursuing are the Folklife Festival; some small theatrical performances, that is not so much plays or drama, but more often concerts for our Smithsonian Associates; and a very important new program that we are just now developing. We have something called Smithsonian Institution Touring Performances. Some of the companies that have served us so well in the Folklife Festival we are now booking around to small colleges. We have one Appalachian group, for example. We have another roots or jazz or black music group. We have another chamber concert group.

This we call Touring Performances. It is a beginning, in a sense, to duplicate in the performing arts what we do with our traveling exhibition service.

Mrs. HANSEN. Are all the traveling performances folk exhibits?

Mr. WARNER. In the folk and rock categories. The universities have responded very well to this. They say, "Yes, send us more." These are some of our future horizons for the performing arts.

Dr. RIPLEY. These are essentially going to colleges and universities, and high schools.

Mrs. HANSEN. I have been very interested in the college drama festivals. This is one program that has been very successful. Many talented young people have had an opportunity to appear. I certainly think the puppet theater and the folk festival have been marvelous.

Dr. RIPLEY. This certainly makes an inspiring contrast to some other activities that happen in our cities today.

Mrs. HANSEN. Yes. I saw the youngsters at one of your puppet shows, and I have never seen faces like that in my life. They were lost in another world. They thoroughly enjoyed it.

Dr. RIPLEY. I may say we have had a number of testimonial letters from Members of the Congress who attended these folk festivals on the Mall, quite a number, because some Congressional Members are here with their children in the summer. Without exception we have nothing but enthusiasm.

Mrs. HANSEN. Mr. Wyatt.

Mr. WYATT. I just have one question, Madam Chairman. On page E2 under the summary report of obligations by objects, this is, I assume, a different kind of breakdown of everything that we have been over here. Under personnel compensation you have a very large increase for 1971 over 1970.

Dr. RIPLEY. This year, sir; this includes the Zoo which is a new obligation.

Mr. WYATT. This is for personnel of the Zoo?

Dr. RIPLEY. Yes. I may say we are peculiar in our Federal budget in that over 70 percent of our obligations are in this "Salaries and Expenses" to maintain these buildings, produce exhibits, and conduct research.

Mr. WYATT. These figures, Dr. Ripley, I assume reflect the addition of the Zoo personnel, the pay increases?

Dr. RIPLEY. Yes, sir.

Mr. WYATT. And probably some peripheral other personnel?

Dr. RIPLEY. That is true. Under the employment ceilings, and so on, we are essentially talking about pay increases, various kinds of nondiscretionary increases which are locked into the system.

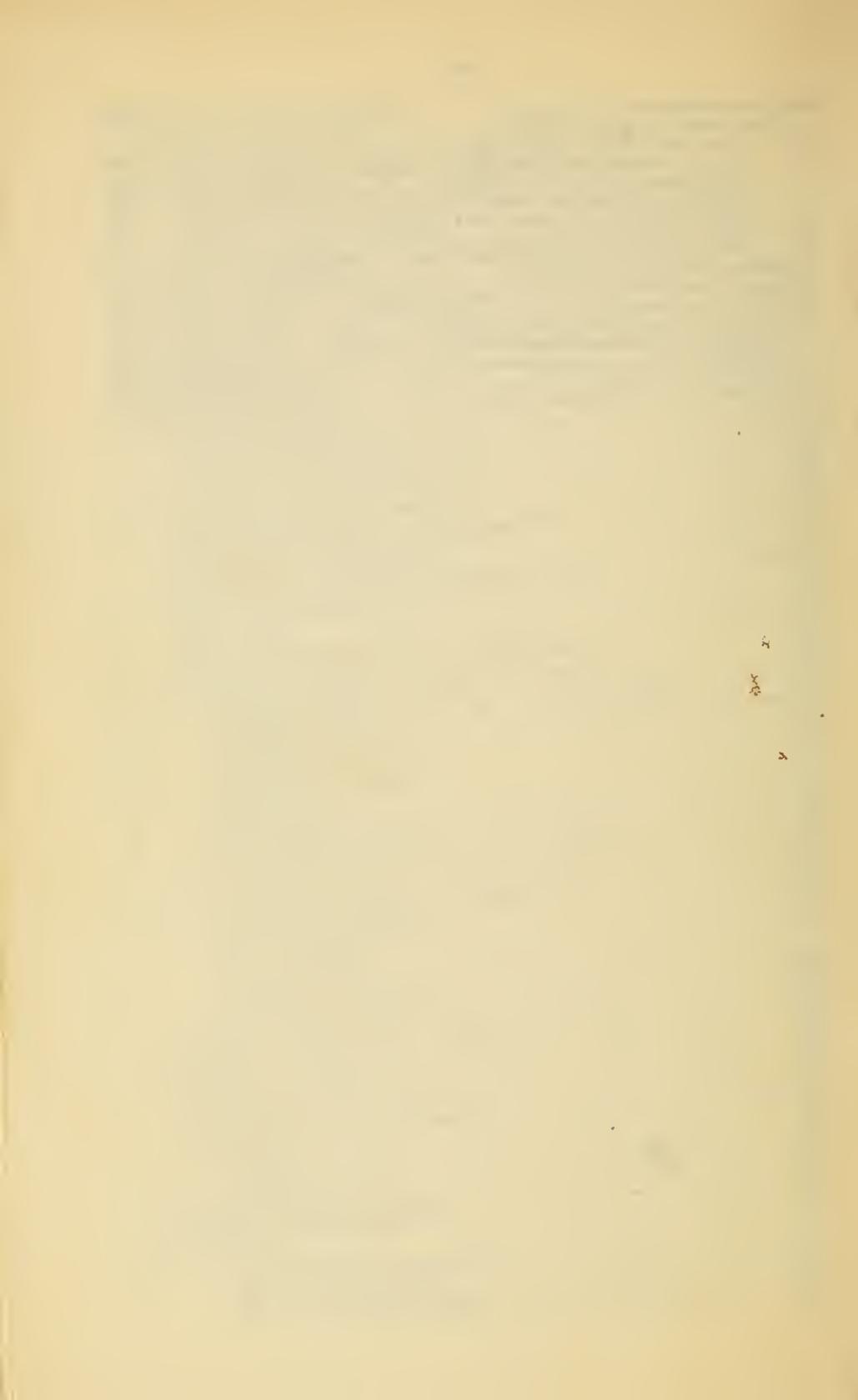
Mr. WYATT. Mandatory increases.

Dr. RIPLEY. Over 75 percent of our budget is involved with these kinds of built-in nondiscretionary expenses, such as payroll, utilities, and maintaining our buildings.

Mr. WYATT. Thank you.

Mrs. HANSEN. Thank you very much, Mr. Wyatt. Thank you very much, Dr. Ripley. I think you and your staff have made a very fine presentation today and, as usual, you have given us a lot of interesting information.

Dr. RIPLEY. Thank you very much. We have enjoyed this presentation.



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