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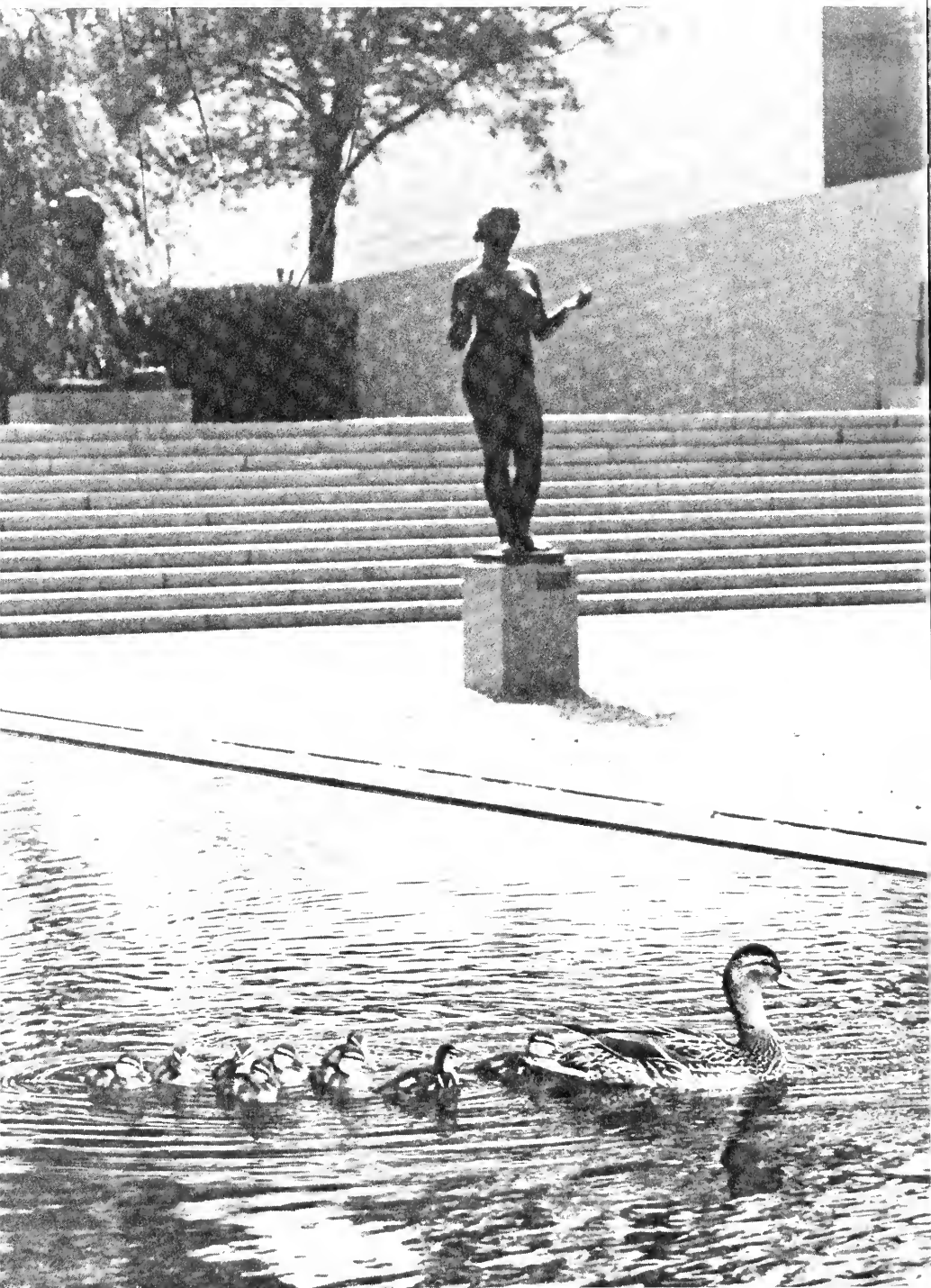
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Smithsonian Year

1975

Smithsonian Year · 1975



Visitors to the Hirshhorn Museum and Sculpture Garden in June not only saw Aristide Maillol's *Nymph* but also this wild mallard duck, proudly swimming with her young. A pair of mallards surprisingly had made the garden their home.

Smithsonian Year • 1975

ANNUAL REPORT OF THE
SMITHSONIAN INSTITUTION
FOR THE YEAR ENDED
JUNE 30, 1975



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THE SMITHSONIAN INSTITUTION

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

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Smithsonian Year • 1975

STATEMENT BY THE SECRETARY



Nineteenth-century lithograph of the original Smithsonian Building, frequently referred to as the "Castle."

Limits to Growth?

S. DILLON RIPLEY

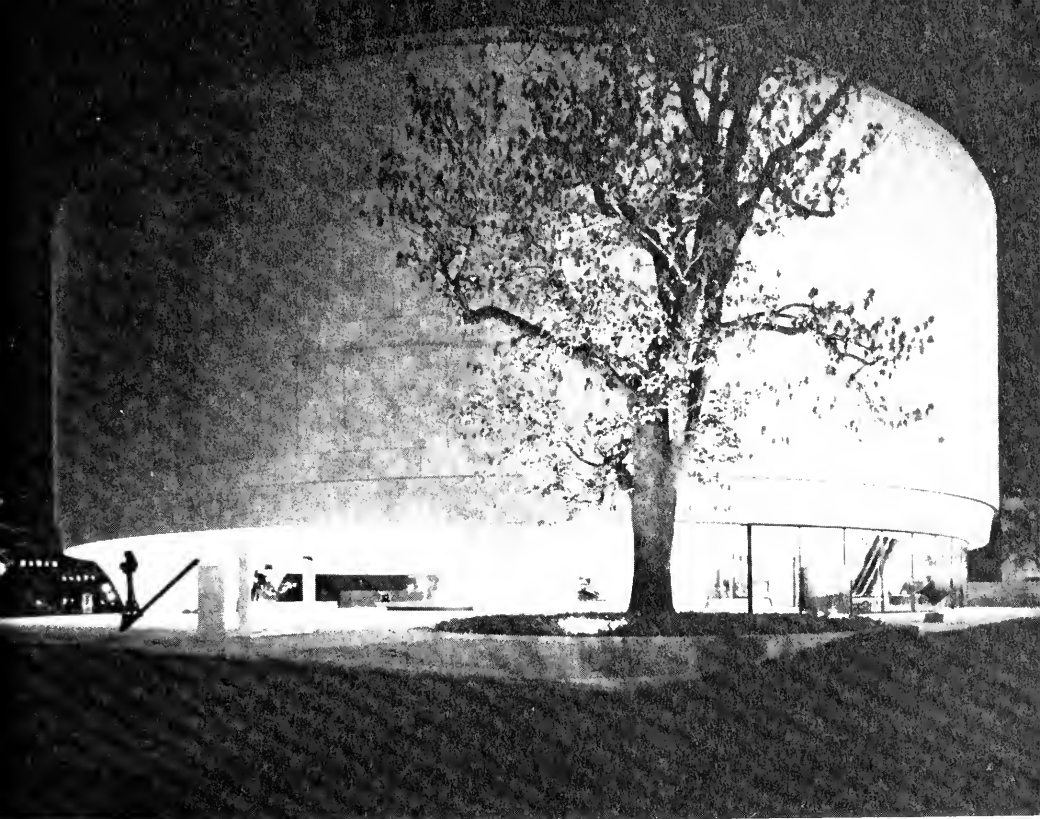
IT IS APPROPRIATE these days to attempt to guess what amount of growth is prudent in an organization. In the United States growth and development have been synonymous with "good" for lo these many years. "Growth" stocks, corporate "growth," "growth" industry—all have been phrases on the side of the angels. And indeed growth is natural, a symbol of animate being. "Growth is the only evidence of life," as a Dr. Scott said to Cardinal Newman a century or so ago.

If then growth of some sort is natural—a condition of being—how can it be measured? At what level is it healthy as in arithmetic growth? At what stage does it become out of control, raging, and cancerous, as in exponential growth? A few years ago all growth was said to be good, but with discussions on natural resources reflecting our new environmental consciousness frame of mind, people the world over have been made aware of the finite quality of certain stores of natural objects, such as oil or minerals, on the one hand, and of the worldwide problem of human population growth on the other. The book, *Limits to Growth*, presaged a levelling off and decline of standards of living based on development, growth, and concomitant expectations within a hundred years, accompanied along the way by a series of small crashes as various raw materials became nonexistent or economically unexploitable. Given these prospects, no matter how much debate centers around the details or the time schedule, the planners of the world, taking stock of the wars and oil embargoes in the Middle East, have grown increasingly uncertain of the future, and hesitate nowadays to subscribe to the prognoses of pre-October 1973.

In this uncertain climate it seems appropriate to take stock and measure our own Smithsonian growth over the past decade. In approximate terms the annual federal budget for salaries and expenses (nearly 80 percent of our total federal budget each year is for operations) has increased from a bit over \$17 million in fiscal year 1965 to nearly \$71 million in fiscal year 1975. At first glance this addition of about \$53.5 million over the period seems a striking proportional increase, especially looking back over the previous ten years.

However, roughly \$23.5 million of the \$53.5 million net increase in the period, or about 44 percent of the total increase, is for unavoidable costs. For example, nearly \$20 million of the net increase in the period is for unavoidable payroll costs, such as legislated pay increases, applying both to staff employed in fiscal year 1965, and for additional employees subsequently authorized by the Congress. (Even if applied just to fiscal year 1965 employment alone, the cumulative effect of these pay increases would have raised our operating costs by more than \$15 million; since fiscal year 1965, pay raises alone have raised the pay of salaried employees nearly 70 percent and wage employees an estimated 83 percent.) During this same period, inflationary increases for items such as utilities, supplies, travel, etc., have further increased costs to the Institution by \$3 to \$4 million. Thus, well over 40 percent of the "growth" of the Smithsonian in the past ten years has been due simply to rises in the cost of living.

If this is so, then what of the roughly \$30-million increase that makes up the rest of our total of \$53.5 million? Where has this been spent and how? Of this real increase nearly \$4 million has been for major national events in celebration of the American Revolution Bicentennial, a program which is temporary in nature and which will phase out gradually over the next two years. The other \$26 million was authorized for the establishment of new activities and for the growth of existing bureaux and offices, including new staff, in the past ten years, but exclusive of their legislated pay increases. Of this \$26 million, more than \$6 million has been for *new* activities such as the Hirshhorn Museum, the Anacostia Neighborhood Museum, the National Museum Act, the Office of Computer Services, and some fifteen other new bureaux and offices. The remaining \$20 million has gone to strengthening



Night at the Hirshhorn Museum and Sculpture Garden.



existing activities and programs in order to keep up with appropriate standards for the museums and laboratories in our care. A highly visible and representative illustration is the Air and Space Museum, which has experienced large increases in staffing and funding as it has prepared for operations in its new building authorized by Congress. Less conspicuous has been a concerted effort to make our vast natural history collections more accessible for research by the application of computer technology and the development of a more adequate level of technician support.

With the growth of state and federally supported university laboratories, as well as the newer support for museums across the land, it ill behooves the Smithsonian to fail to keep up, either in salaries or in support activities. Otherwise our national obligations would be severely jeopardized. Skilled and specialized people in the museum and laboratory world are at a premium. There is intense competition for their services, just as there is high demand for particularly skilled teachers in the academic marketplace.

It is perhaps worthwhile to cast a glance at the directions toward which our \$6 million for new activities has been steered. In the museum field, new activities cover a broad range. In art, the Institution has added an entire new museum, the Hirshhorn, filling a recognized gap in the Smithsonian's offerings for public exhibit, a need which had been identified since as far back as 1938 but never previously acted upon. Thus, by acquiring the Hirshhorn collection and the museum to house it, the Institution took one giant step forward in a tangible intellectual sort of growth by adding a new dimension of aesthetic appreciation to the Nation's Capital. Already in the first nine months of its existence, the Hirshhorn has lived up to its promise by receiving 1,620,540 visitors, making it one of our most popular museums in Washington.

The Cooper-Hewitt collections of decorative arts in New York, a most significant and growing department, has been added to our art-related collections. The Anacostia Neighborhood Museum, a new experiment in community relations and the fostering of technical museum training and art appreciation in a largely black community, has been extremely successful and is now the recipient of nearly a half-million dollars of annual federal operating funds. The Archives of American Art is a new responsibility of the art curatorship of the Institution, bringing to the Smithsonian a com-

prehensive documentation of the papers and life histories of American artists. Finally, the Smithsonian Traveling Exhibition Service now receives federal support enabling it to present, in 1975, 498 exhibitions in forty-five states and seen by approximately four million visitors.

In the realm of the sciences, environmental study receives support through the newly created Chesapeake Bay Center as well as through the Environmental Sciences Program which, together with the Research Awards Program, represent annual expenses of more than \$1 million. Additionally, the social sciences are represented for the first time in the field of social anthropology through the Center for the Study of Man. (History in the Museum of History and Technology includes, of course, research in what could be described as humanistic study as part of the social sciences.)

Finally, international programs, public information and orientation services, and equal opportunity and other important administrative services make up the rest. Thus of our \$6 million for *new* activities, 36 percent has gone to the arts, 20 percent to the sciences, and about 33 percent to administering various services. The remainder, nearly 11 percent, is accounted for by the technical training grants program of the National Museum Act. This program serves other museums and perhaps should not thus be regarded as support for the Smithsonian itself.

The private funds of the Institution have also grown substantially during this ten-year period, from a budget of \$12.1 million in fiscal year 1965 to \$35.9 million in fiscal year 1975. As with our federal appropriations, however, inflation of approximately 70 percent in the past ten years has cut heavily into the purchasing power of the 1975 dollars, and again our real growth here has been far less than it would seem. In 1965, for example, the Smithsonian spent \$9.1 million of federal grant and contract awards on various research projects; in 1975 federal grant and contract expenditures, once again exclusive of administrative expenses, were approximately \$10.1 million. Deflated to 1965 dollars, however, it appears, in real terms, the Smithsonian this year had available \$3.2 million less from these sources than ten years ago.

Aside from these grants and contracts, the private funds budget has grown from \$3.0 million to \$25.7 million. This growth, although also substantially diminished by inflation, does reflect the

greater flexibility of private funds to begin new activities as opportunities arise—specifically it has allowed the expansion of the Institution's education "out reach" program through the National Associates, spreading the values of our knowledge, research, exhibits, and collections to citizens throughout the Nation. It has allowed improvements also in services to area residents and to our visitors to the Nation's Capital. Included in these improvements are a first experiment in a neighborhood museum, an enormously successful annual Festival of American Folklife on the Mall, as well as fully financed activities in oceanographics and the acquisition of major collections.

In all of this we feel that our growth has been a logical outcome of expressed needs of the Institution for further appropriate support, and for the addition of new activities to supplement and buttress what we are already trying to do. Fortunately, as the critic Hilton Kramer has pointed out in the *New York Times* (May 25, 1975), where we have added museum collections of real magnitude or differing theme, we have been able to house them in separate buildings rather than having to expand an ever-growing single roof, or balloon out on a single ever more vast building. In my own opinion the days of combining all the world's spectrum of art—produced in all the continents from pre-classical to contemporary times, ranging in style from the Old Masters to "ethno-art" or tribal arts—under a single roof in a multicellular building are over. Museum fatigue can be akin to twisting the dial too rapidly on a television set. A kaleidoscope of impressions inevitably brings on premature symptoms of brain damage. In a vast collection like the Metropolitan Museum of Art, only rigorous discipline will allow the practiced museum-goer or guided student to focus on a single exhibit or period of time in cultural history on a single visit, presumably one of many. The average museum-goer has no such opportunity. A single visit can only produce a kind of cosmorama or phantasmagoria so that the etiology of museumitis is assured.

But if we attempt to make the Institution's growth selective, how do we select? In the past two years the Smithsonian has embarked on a series of priorities studies, using our administrative resources to marshal bureau directors, our distinguished Smithsonian Council, our National Associates Board, and our Development

Office, to focus on where our real needs remain. A seminar among our science bureaux last February at Front Royal, Virginia, was another example of our reassessment of our own progress.

It is quite clear from all these discussions that the future growth of the Institution should consist of two parallel and distinct types of activity. Physically, as far as existing needs are concerned, we have reached a sort of plateau of new growth. We need desperately a consolidated Museum Support Facility to house, curate, and conserve collections, in an off-campus setting, away from the Mall. The public exhibition facilities on the Mall should not be further cramped by the increasing pressures of storage and curation.

We already possess the land and some of the facilities at Suitland, Maryland, to expand appropriately. We need to create a new way of looking at collections, working with them, and training conservators as a prototype for a national conservation school. Surely the Smithsonian must accept the responsibility for conservation of objects. We curate and store hundreds of thousands of objects made by man, just as the Library of Congress and the National Archives curate and store millions of documents, records, manuscripts, and books. Only recently has it been realized that the legacy of man-made objects is just as valuable historically and philosophically as the testament of the written word. Present efforts to conserve these objects are still in their infancy, carried on spottily throughout museums and historical collections all over the country by about two hundred trained persons. The training of conservationists and the study of conservation techniques are of the highest priority. Unless the Smithsonian can develop a Museum Support Facility, outside the District of Columbia but still available for curation and training, we shall be shirking our national responsibility, the outline of which was laid down in our original charter of 1846 to be the "keeper of the national collections."

Additionally, of course, we must renovate, repair, and refurbish our old buildings and their surroundings. This task of keeping level with decay and over-use is a fearsome one which never ceases. It is a task occasioned not so much by growth as by the need to maintain our installations at many levels—physical, aesthetic, and intellectual. Lack of attention to these concerns brings more expense and trouble. Our surroundings directly affect their own maintenance. It is easy enough to note that run-down lawns, neglected

bushes or flower beds have just as direct an effect in increasing untidyness and litter, as do shabby interiors, torn rugs, or broken furniture.

One of the sadnesses of some contemporary architecture today is contrived drabness. I recall sitting on an austere stone bench (very new and stark) in the lower lobby of a brand new building at Yale University, whose extruded aggregate wall and studied terrazzo and cement floors conveyed all the style of a World War II European concentration camp. A graduate student having finished a soft drink bottle taken from a vending machine near the door to the library, simply hurled it into the corner to smash and add to the litter rather than place it in the handy rack for empties. This was not an isolated gesture but rather a symbolic act. When in Bedlam or in Belsen by all means behave like the other inmates—or the guards?

The positive aspect of maintenance may be summed up: to preserve is also to improve. And so the tasks of conservation, curation, and storage go hand-in-hand with the tasks of keeping up, of refurbishing, and of redoing our exhibits—whether in the National Zoo, or the museums—and of refining our laboratory facilities. These tasks are not those having to do with growth but rather those pertaining to prudent management.

The final, most important task which involves taking care of what we already have is how to utilize the objects. With the increase in collected objects comes an increasing responsibility for growth in depth. Communication between bureaux and between museums concerning collections, understanding what it is that we possess, where it is, and how to retrieve the pertinent data, becomes a new priority. Like libraries, museums suffer from bigness. Often one department does not know what another has or where it is or how to find it. Cataloguing and retrieval of museum information are still miles behind the universality of present library techniques.

Here is an area where the Smithsonian has an opportunity to provide national and international leadership in handling the transmittal of information on collections; where they are, who knows about them, and what more remains to be found out? We still have no mechanism to correlate our cataloguing information with the records of our registrar, who is concerned with logging objects in or logging them out. We have no compatibility in systems, no

agreed-upon vocabulary, no way of meshing in objects data with library data, even though we know the basic principles for carrying out these procedures. Thus the work of finding out how to use and how to exchange information on our objects is in its prehistoric stages. And yet as we are the caretakers of a finite set of things for posterity, we must not only conserve them but we must provide the memory bank to let our successors know that we even knew we had them and, as well, what we thought about them.

Finally, the second parallel and distinct type of activity of an institution such as ours is indeed growth. "Ah ha," the gentle reader will say, "truth will out. We always suspected the worst"!

It is true that museums as such are concerned with growth. I often think that today's museums are the only legitimate growth industry left. It is the nature of a museum to acquire objects, although today the acquisition process is highly refined. As I noted earlier, the Club of Rome study intimated that certain natural resources, oil or copper for example, are finite in quantity in the world and may run out. In the same way, museum keepers know that the supply of objects, whether made by man, or great natural objects, such as whales or pandas, are finite in number and will inevitably run out in due course. So endangered man-made objects must be preserved and collected with the same zeal and care needed for endangered living species, end-products of the miracles of evolution, that they may be preserved alive in some manner for the future. How curious that a museum or zoo ends up being both a growth industry and an instrument of conservation? What a paradox to find a growth industry which is not at the same time a *consumer* of resources?

Equally, for better or worse, the Smithsonian is constantly involved in turning down potential gifts. Such gifts may range from buildings to vast or small things. Thus we recently have turned down the San Francisco Mint, the Saint Louis Post Office, and the liner S.S. *United States*. Additionally we have politely rejected the largest collection of ceramics from Thailand ever offered to any museum in the United States (because we could not prove they were legally imported).

But of course the Smithsonian accepts things especially where the things in some way interdigitate with other things we already have, or represent lacks in closely related subjects. For example, the

Institution possesses a good deal of basic railroading material and documentation of the history of railroad evolution in the United States, but we lack a "donkey," a particular small shunting engine of a type long since dismantled and now only rarely found in the Southern States used as a power take-off for temporary logging or lumber mills set up in pine forests. But how to find one? How to seek out that rarity, that sadly unrecognized relic, beneath whose dirt and greasy squalor lies the "impassioned beauty of a great machine." Oh Georgia-Pacific, Oh Weyerhaeuser, where is thy benison? Where in some neglected forest glade lies maundering that rusting hulk?

Another area in which our collections have strength is in the history of porcelain-making in Europe. Oriental hard-paste porcelains were greatly admired in the West, but it was not until the early eighteenth century, under the aegis of Augustus the Strong, Elector of Saxony, that hard-paste porcelain was successfully produced in Europe at Augustus's Meissen factory. Through the benefactions of a few donors, notably Dr. Hans Syz, our Museum of History and Technology possesses an important collection of European hard-paste porcelains as well as a fascinating exhibit of many Oriental prototypes in design and pattern.

But of the equally significant soft-paste porcelains, especially from French factories of the late seventeenth and the early eighteenth centuries, such as Rouen, Saint Cloud, Mennecey, Chantilly, and Sèvres, we are woefully deficient. To demonstrate the developments in ceramic history and technology in Europe and the United States, gaps such as this must be filled. And so, collectors, know that the Smithsonian would indeed welcome gifts, not only of French soft-paste porcelain, but of many other types of European and American ceramics dating from about 1700 to the present. For this is only prudence on our part. If we are to preserve such objects, they must be *en suite*, to make the collection comprehensive and historically more worthwhile for study. In this pursuit there should be no impediment.

But the question of collecting is fraught with complication. As I have pointed out, the objects are finite in number, like rare natural resources. They may be fought over by rival directors or keepers with ferocious or Machiavellian zeal. Or again they may be already possessed by one institution or other and unavailable for further

acquisition. This is all right if the objects are well taken care of, documented, or conserved. It is also all right if they are available for outside study or loan. Here the Metropolitan Museum of Art in New York has recently been pioneering most farsightedly in loan collections exchange so that objects of great rarity, not otherwise available for collecting nor thus for viewing or studying, may be exchanged temporarily or for a longer term, to benefit others.

In such cases of higher need or high policy, the broad vision of a director or a group of trustees may well exceed the imagination and vision of a particular curator. Some curators are objective and full of vision, ample in their comprehension of the needs of museums in general as well as of the possibilities of education for the public, but others may still have a long way to go in the area of *possessions*. Like members of a family trying to divide up a parent's possessions after the funeral, curators sometimes let their humanness show. They may not always be willing to lend, exchange where possible, or otherwise make objects available for study.

Perhaps this is where the attic image for museums makes its appearance. People are possessive but not for scholarship. They want to own things but not for posterity. They are proud of possessions, but not careful of their provenance or thoughtful of their future. After a time they have possessed, as they have loved, and, the embers growing cold, they could not care less what happens to the objects. So send them up to the attic or send them to the local historical society or museum! What's left anyway? And that's how museums often inherit their collections. No wonder then that the curator, mindful of how this careless largesse has been acquired, becomes jealous, or secretive or unsharing, bound that his superior knowledge and his possessions will carry their secrets with them to the grave. Such is the very antithesis of rational curation, conservation, and care for posterity. Surely no curator worth his salt can fail to admit that some of these unworthy thoughts have passed through his own head.

Thus museums are a growth industry give or take a few years. Selective as they may be, "growth is the only evidence of life." But such growth is difficult to plan, notwithstanding established priorities. Maybe we will never get a shunting engine or a perfect collection of "soft-paste" china, but there are other targets of

opportunity along the trail. If an opportunity should come for the Institution to acquire a collection of portraits of native Americans similar in quality to those secured in the late 1870s painted by George Catlin, should we say no because such an unexpected event is not listed among our priorities? Fortunately, museum curators, knowing that no one really cares about posterity except themselves and librarians, would not be so pedantic. At such a moment a proper curator throws caution to the winds and acts as decisively and coolly as James Bond with one minute to solve the fate of the world. The curator knows as surely as "007" that in acquiring certain things from time to time, there is no priority. There is only the urgent necessity. Equipped with such powers of discretion, sureness, and authority, curators may act as coolly and shrewdly as any great intelligence operative, knowing that what they are after may represent one of the world's only legacies for the future.

Thus the Smithsonian will continue to grow, and to conserve prudently and to refurbish what it possesses, mindful of the keenness of perception and judgment required along the way. It is an honorable task, and an onerous one, not easy, for the world finds such skills difficult to understand, their worth hard to evaluate, and there is no school in which to learn except that of experience. And yet this is a task of high priority, for collectors remain one of the only means we have to help the long train of understanding, of communication between generations which is the very stuff of history. If history is transmitted in an institution such as ours then this reinforces and instructs the present and casts a glimmer of light into the murky shades shrouding the future.

I have referred in the past to a museum as a social planetarium where past may be delineated, present experienced, and future postulated, the latter deriving from both the others. We hope that an additional natural development for the Smithsonian will be the creation of a flexible area adjacent to the National Air and Space Museum, where some presentiment of the future may be exhibited. We would show some of the results of our known technologies, both newly acquired, as well as re-use of old, for solar energy, water conservation, food resources—in general, all that we know or can perceive about life support systems. As we near the end of our Bicentennial it is well to look ahead to our Tricentennial, and in the process demonstrate to our citizens some of the implications contained in the concept *limits to growth*.

Limits to growth in this sense is not a real phrase. It is merely symbolic and in proposing it the authors of the Club of Rome study were suggesting a riddle. Mankind cannot exist without growth but we would be wise to accustom ourselves to an outlook which stresses the interdependence of our existence as humans on the planet. While nationalism and independence are taken for granted today, the world economy, the use of resources, the interlocking systems by which we live are inevitably becoming supra-national.

Paradoxically, just as events in the world at large having to do with available resources, food, and overpopulation should be reminding the statesmen of the world of our interdependence, our international political institutions such as those associated with the United Nations are increasingly threatened by neo-nationalism, tribal and ethnic factionalism, and irrational social behavior. Perhaps we need some practical demonstrations, such as those related to how we are going to have to share in the future in order to exist at all, to remind us that we should impose societal discipline upon ourselves rather than have it superimposed upon us by events beyond our control.

As the Institution looks back over the past year one priority clearly emerges. Along with evaluation of our procedures and our growth should come an examination of ways to make ourselves more self-reliant. Only in this fashion can we carry through our objectives in a businesslike and timely fashion. I have always felt that the Congress encourages us to act in such a responsible fashion and indeed they have. The fact that we are filling in the West Court of the Museum of Natural History using funds that the Institution has raised privately so as to improve the facilities for our visitors, school classes, tourists, and Associates alike, as well as to produce restaurant accommodations for their comfort, has reminded our Congressional committees that we have an obligation to do this. We can act independently and prudently as we are chartered to do, using private support to achieve goals related to the education and convenience of our visitors. This is a facility which would have taken far longer to achieve using the normal budget review and Congressional appropriations procedures and would, therefore, have been inevitably far more expensive. We can be thankful that our charter gives us such flexibility.

Such a development could not have come about without the support the Associates have given us. At every level, locally and nationally, there is a new awareness of the Smithsonian abroad. This has come about largely because of Associates' activities which bring them a new understanding of our work and concerns. The local programs of the Associates in Washington now involve some 70,000 people. Our national membership now stands at over 900,000. This means that for the first time Americans in a measurable proportion across the land have a feeling of belonging to the Smithsonian and are in the process of understanding more clearly their own heritage. For in this awareness they will realize that the Smithsonian belongs to them.

This past year has seen the birth of two additional forms of Institution outreach, one popular and of questionable impact from our own point of view, the other of more immediate educational interest to ourselves. The first was an apparently highly successful series of three television hour specials on prime time, on the Columbia Broadcasting System network, produced by David Wolper, the celebrated independent producer, and sponsored by du Pont. The three programs were light, somewhat frothy, and varied from sensational to charming and nostalgic. I enjoyed them as entertainment, as nearly fifty million Americans seemed to do, and I hope they will be produced again. As entertainment they can remind the public that the Smithsonian is fun and not merely "good for one," like castor oil or blackstrap molasses. Of course the more we can remind people that learning is fun, and that the Smithsonian is fun, the better.

The second event has been the release of the first of our Encyclopaedia Britannica filmstrips for schools. We hope these will spread across the land and increase the accessibility of our collections to everyone in the same way that we hope to enlarge our Traveling Exhibition Service of objects ranging from prints and pictures to decorative objects or historic objects illustrating crafts and technology.

This past year has included several important appointments. Mr. Stephen Weil has come to us from the Whitney Museum of American Art in New York to assume the post of Deputy Director of the Hirshhorn Museum and Sculpture Garden. Dr. James Billington has become Director of the Woodrow Wilson International Center for

Scholars after a trial year's leave from Princeton. Dr. Forrest C. Pogue was appointed Director of the Eisenhower Institute for Historical Research in the National Museum of History and Technology. Mr. Lawrence Laybourne has joined the Smithsonian as Coordinator, Office of Membership and Development, after working as a Vice President for Government Affairs of Time Incorporated for a number of years in Washington. Mr. Howard Toy has come to us as Director of Personnel from the Office of Economic Opportunity. We are honored and pleased with these significant additions to our staff, and honored also that Francis S. L. Williamson, Director of the Smithsonian's Chesapeake Bay Center for Environmental Studies, has taken a year's leave of absence to serve as Commissioner of Public Health and Social Services in the Cabinet of Governor Jay S. Hammond in the state of Alaska.

Two retirements after many years' service of particular importance this year were those of Dr. George S. Switzer and Mr. Jeremiah Collins. Dr. Switzer was in the Department of Geology from 1948, and in the Department of Mineral Sciences from 1963, and Chairman of that Department from 1968 until his retirement. Mr. Collins has retired after nineteen years of service with the Smithsonian's International Exchange Service during seventeen of which he was head of that Service, which each year on behalf of the Library of Congress and government agencies ships many tons of published works from the United States to libraries abroad.

Death claimed several of our men in the Smithsonian service including the untimely loss of Mr. L. Wardlaw Hamilton of the General Counsel's office in a motor accident and Mr. Jesse E. Merida, a museum specialist in geology, of a heart attack. Howard I. Chapelle, an internationally known marine historian and author, who was Historian of Marine Architecture on the staff of the National Museum of History and Technology until 1971, died on June 30, 1975. He had been a prominent member of the Smithsonian staff since 1957.

For a mere nine months of the past year, our visitors to the Smithsonian buildings in Washington, excluding the Zoo, comprised 13,128,000 people, a considerable increase over the preceding year. However, among our problems with this continual growth of visitor interest has been the limited space for circulation, as well as our pitifully limited funds for renovation of the space we possess.

Among the six major museums of natural history in the United States from the West Coast to the East, the Smithsonian's Natural History Museum ranks last in space for exhibits, 166,000 square feet, close to a third in size of the largest of those museums (the Field Museum in Chicago), but with visitor attendance three times as large as that of the larger museums. The resulting wear and tear makes critical our need for renovation funds as well as for a new support facility for research, conservation, and off-Mall curation of collections. We are doing our best, as I have noted earlier in this report, to match federal funds with private support in renovation in that particular museum, but the obligation to serve the public subsumes a similar obligation for help from the public sources that support our museums for the public good.

Our labors would be incomplete without the many gifts which the Institution has received over the year in funds or in kind. The principal acquisition during the year has been the formal decision by Mr. Bern Dibner to transfer to us his extraordinary library and collection of artifacts in the history of science. This collection has been referred to elsewhere in our annual report of this year and last, but it helps to place our departmental work in the history of science and technology in a new context. I could say with some confidence, *primus inter pares*.

Gifts to the Institution are also listed elsewhere, but among them of special note are the two outstanding Bicentennial donations of a million dollars each from American Airlines and General Foods for support of our Festivals of American Folklife of 1975 and 1976, and the gift of the Summa Corporation of funds for the Howard Hughes "Racer" plane and its exhibit in the National Air and Space Museum. We are most grateful to the Eppley Foundation for support of fellowships at the Radiation Biology Laboratory and its work on ozone concentration. Finally we should not overlook the gift from eight third-grade boys at the Oñate Elementary School in Albuquerque, New Mexico, who set up a research project on mythology and organized a classroom museum exhibit, charging one cent in admission. From this they donated their entire proceeds to the Smithsonian, \$6.08. We are grateful indeed for their wholehearted enterprise.

For the first time an *ad hoc* committee of members of the National Board of the Smithsonian Associates worked together in

the review of a Smithsonian project. The Chancellor appointed two members of the Board of Regents and two members of the National Board whose interest in oceanography and the environment were germane to the review of the Fort Pierce Bureau. It is expected that in the future similar projects will be reviewed by such *ad hoc* combined efforts.

Board of Regents

THE BOARD OF REGENTS held its customary three meetings in fiscal year 1975.

At the Fall Meeting of September 24, 1974, the Board welcomed Dr. Gell-Mann as a recently appointed Regent. It was noted with great satisfaction that Mr. Burden and Dr. Haskins had been re-appointed, by acts of Congress.

The financial report was summarized for the Board and the Board congratulated the Secretary for the good financial position of the Institution. In the Financial Report presented in this report, there will be found a full discussion of the finances of the Institution, including comment on the market value of current funds, endowment funds, and plant funds.

The Board accepted with pleasure the gift of Mr. Bern Dibner consisting of the major resources of the Dibner Library of the History of Science and Technology.

The Cooper-Hewitt Museum was discussed at some length and the Board resolved to continue all efforts to bring the Museum into active operation.

Hillwood Museum was found to continue in financial distress, due to the investment market, and will remain in a holding status. A public opening will depend on a satisfactory long-term solution to financing of operating expenses.

The agreement with the Marriott Corporation for construction of a three-story building to contain a restaurant, office space, and

public education areas in the West Court of the National History Building was ratified. This is a joint venture using Marriott funds and Smithsonian private funds.

The Congress reauthorized the National Museum Act in accordance with the recommendation of the Regents. It was noted that the construction programs for the National Air and Space Museum and the National Zoological Park were progressing satisfactorily. It was further noted that additional steps should be taken by the National Park Service and the D.C. Department of Highways and Traffic to provide automobile parking for traffic, especially during the Bicentennial year.

The Regents were assured that the Comptroller General had examined a number of legal questions raised by a Senator and had found no evidence that the Hirshhorn matter had been illegally consummated in any particular.

The Regents complimented the Secretary on being appointed as an Officer of the Ordre Français des Arts et des Lettres. The meeting was followed by a pre-opening tour of the Hirshhorn Museum and Sculpture Garden.

The traditional Annual Meeting of the Board was held on January 24, 1975.

The financial report was summarized and presented. The new federal fiscal year beginning on October 1 and ending on September 30 was adopted by the Board.

After hearing an explanation by the Treasurer of the need for additional costs for the projected three-story building for the West Court of the National Museum of Natural History, together with an urgent plea from Director Porter Kier for the improvement, the Regents approved proceeding with the project.

On the basis of an historical review of some six years of oceanographic research based at Fort Pierce, Florida, the Secretary proposed and the Regents agreed to a review for future guidance of the corporate and program relationship with the donors, J. Seward Johnson and Edwin A. Link. A Smithsonian *ad hoc* committee comprising several Regents and members of the Smithsonian's Board of National Associates was proposed. Mr. Johnson and Mr. Link concurred.

Mr. John Nicholas Brown, Chairman of the National Armed Forces Museum Advisory Board, reviewed for the Regents the long

history of the unsuccessful actions taken to establish an outdoor military museum. The combined difficulties of acquiring a riparian site to accommodate naval as well as land-based exhibits and the acquisition of a site with automobile access without disrupting the adjoining residential subdivisions had defeated our numerous efforts. The Regents recognized these barriers to an outdoor museum in the environs of Washington. They received with favor the description of the potential of the Eisenhower Institute in the National Museum of History and Technology to develop future programs to portray the historic contributions of the Armed Forces of the United States. The Regents then directed that the report of the Advisory Board be transmitted to the Congress pursuant to the provisions of Public Law 87-186.

The Regents considered the six-year history of efforts to obtain Congressional authorization of a museum support facility to relieve the crowding of objects of historical, scientific, and artistic significance into corridors and exhibition space. The Regents resolved to request the Congressional Members to reintroduce legislation to authorize planning of the support facilities, to be located off the Mall but in a location as near as possible.

The Regents considered favorably a proposal for legislation to reserve for the Smithsonian's public service purposes the last remaining building site on the Mall, between Third and Fourth Streets, Maryland and Independence Avenues, and Jefferson Drive.

The Board considered and approved the actions taken by the National Collection of Fine Arts Commission, primarily the acceptance of works presented for accessions.

To assist the National Portrait Gallery in carrying out its basic functions, the Board authorized the Secretary to request the Congress to amend the founding act of April 27, 1962, so as to add to its programs the collection and display of prints and photographs. The Regents approved the actions of the National Portrait Gallery Commission at its meetings on May 8 and November 11, 1974, primarily relating to accessions.

The Regents were given further status reports on construction projects at the National Air and Space Museum, the National Zoological Park, and the Arts and Industries Building, and accepted with great pleasure the gift of Mr. William A. M. Burden of ballooning artifacts, including books and furniture with a ballooning motif.

A motion was adopted to designate the education building at the Chesapeake Bay Center as the Jean C. Schmidt Environmental Education Building in honor of Miss Schmidt's development of an environmental awareness program before her untimely death.

The Spring Meeting of the Board was held on May 14, 1975.

The Chancellor warmly welcomed Vice President Rockefeller and Senator Frank E. Moss, who were attending their first meeting of the Board. Senator Moss of Utah succeeds Senator J. William Fulbright. It was noted that on January 28, 1975, the Speaker of the House of Representatives had reappointed Congressman George H. Mahon as a member of the Board, and had appointed Representative Elford A. Cederberg and Representative Sidney R. Yates, each for a term of two years.

The Regents were presented a summary of the Federal Budget of \$79,408,000 for operations and \$17,892,000 for other special projects including construction, and the reconstruction of the Egyptian Temple at Philae. The status of the nonfederal funds of the Institution were presented in detail. The Board approved the budget of the private funds for fiscal year 1976.

The Investment Policy Committee Report was presented on behalf of the Chairman, Mr. Burden.

In accordance with the governing statute, the Board submitted recommendations to the President for appointment to the National Armed Forces Museum Advisory Board.

The Regents received the report from the *ad hoc* committee on Fort Pierce, Florida. The study included a tour of the facilities and talks by members of the scientific staff. The principal programs are the Indian River Study, the Life Histories Studies, and the Submarine Exploration of the East Florida Continental Shelf. These and other research programs were considered by the Smithsonian staff to be worthwhile and should be continued. Dr. Murray Gell-Mann of the review committee concluded in its report that the present arrangements for accomplishing the scientific objectives at Fort Pierce should be continued on substantially the same lines, with a yearly review of objectives. The Regents approved.

Several bills introduced by Congressional Regents had been favorably reported by the Subcommittee on Library and Memorials of the Committee on House Administration. Included were a bill to authorize planning of a museum support facility in Suitland,



From left to right: Mrs. John Nicholas Brown, Secretary and Mrs. S. Dillon Ripley, and the Honorable John Nicholas Brown, Regent and Chairman of the National Armed Forces Museum Advisory Board, Smithsonian Institution, in the Great Hall, Smithsonian Institution Building, evening of May 14, 1975, at the conclusion of a reception and dinner given by the Board of Regents and the NAFMAB in Mr. Brown's honor, on the occasion of the dedication of the Dwight D. Eisenhower Institute for Historical Research. The Board of Regents bestowed the Henry Medal on Mr. Brown on this occasion.

Maryland; a bill to reserve the last remaining building site on the Mall for the Institution's use; and bills for the reappointment of Regents Brown and Watson.

The Board expressed its continued support for the position that automobile parking at R. F. K. Stadium is not an adequate alternative to the present parking on the Mall and the additional visitor parking expected in 1976. The Smithsonian has proposed parking at the Jefferson Memorial, Tidal Basin, West Independence Avenue, and the old Polo Grounds. No action has been taken by the National Park Service.

The current status of various construction projects was given; details will be found in Appendix 4 of this report.

After discussion with several art curators and architects, artists Richard Lippold and Charles Perry were given study contracts to develop scale models for the entrance to the National Air and Space Museum. Outside financial support would be most welcome.

The agreement with the Summa Corporation regarding the giant aircraft "HK-1" was reviewed by the Secretary for the information of the Regents. Because of the substantial costs involved in providing a suitable building, transporting the aircraft, and maintaining so exceptionally large a museum display, it has been agreed that Summa will continue to maintain the craft for one year. If it is decided to dismantle the plane rather than to attempt to donate the craft for display, the Smithsonian will have the right to take portions of the plane.

The Secretary called attention to the comprehensive appraisal by Dr. Crawford Greenewalt of the Smithsonian Tropical Research Institute (STRI) in Panama, circulated to the Board.

Mr. Goheen stated that he would like to know periodically the progress of the Institution in equal employment opportunity. The Secretary referred to a report which was given to the Regents on the Civil Service Commission's survey of 1973.

The Regents then joined their wives and guests for a reception and dinner honoring Dr. John Nicholas Brown on the occasion of the dedication of the Dwight D. Eisenhower Institute for Historical Research, at which Dr. Caryl Haskins presented the Henry Medal to Regent John Nicholas Brown for his devoted service to the Institution and the Nation.

The Board of Regents have encouragingly expressed their in-

terest and concern for our measured growth, our assessment of priorities consonant with that, and at the same time the growth of our own awareness of staff and personnel problems. They realize our concern for equal employment opportunity, for upward progress in jobs, for the consensus of opinion on ratios in employment, minority representation, and equal employment opportunities for women.

With this we welcome their support of the appropriate training help to nourish our resolve to make museum careers attractive to people in this country who before might have been quite unaware of such opportunities. If we can raise the consciousness of people in general about museum work, and its opportunities for self-enlightenment, for jobs, and for the fascination and fun involved, we will have justified many times over the conviction that here is indeed a legitimate growth industry.



The Commons Restaurant in the Smithsonian "Castle" serves a buffet luncheon to visiting Smithsonian Associates and to the Smithsonian staff.

FINANCIAL REPORT

T. AMES WHEELER, TREASURER

SMITHSONIAN'S FISCAL YEAR 1975 may be summarized as one of continued sound financial progress, even though financial needs continued to increase. In part, this need was to meet further large inflation-bred increases in salaries and wages, utilities, and other operating costs. In addition, new activities, including the opening on October 1, 1974, of the Hirshhorn Museum and Sculpture Garden and the continued step-up in preparations for the 1976 Bicentennial and next year's scheduled opening of the new National Air and Space Museum, required further substantial support. Fortunately, the Smithsonian received federally appropriated funds to cover a large part of these added needs. Federal appropriations also provided a major increase in funding for construction at the National Zoological Park at a rate designed to achieve completion of its master plan renovation over a ten-year period. Despite the generous increase in appropriations, however, tight budgeting of these funds and curtailment or postponement of a number of worthwhile projects was necessary. Formal management reviews of the Institution's priorities have been beneficial in directing our efforts toward the best uses of these available resources.

At the same time, our private trust funds were strengthened further during the year, despite the need to meet from our own resources the same types of inflationary cost increases as affected federally funded expenses. Private fund income derived from investments, gifts, the Smithsonian Associates programs, museum shops, concession fees, and other revenue-producing activities increased substantially in fiscal year 1975. Gifts, largely for specific

projects, such as Air and Space exhibits and the Bicentennial Festival of American Folklife, more than doubled those of the previous year.

These private trust funds have normally been used principally to take care of administrative expenses, to fund programs specified by donors, and to assist in a modest way a variety of our Bureaux' endeavors, such as small research efforts, publications, or the acquisition of collection items for which federal funds have not been available. In fiscal year 1975, larger private revenues made it possible to initiate a long-sought program of adding to the Institution's present meager unrestricted-purpose endowment funds. Increased private fund resources also made it possible to finance improvements to our Museum Shops and, assisted by foundation grants and other donations, construct a new training building for the Chesapeake Bay Center for Environmental Studies and start the renovation of the Cooper-Hewitt Museum's new quarters (toward which we are still seeking another \$1,000,000 of outside support). Continued success of the Institution's self-help efforts, which also play a major role in bringing the Institution's educational values to a wider audience throughout the Nation, will enable us to continue the strengthening of our endowment funds, the allocation of additional support to our bureaux in areas not covered by federal funding, and the construction of improved facilities for our visiting public and Smithsonian Associates already underway in the West Court of the National Museum of Natural History.

Overall Sources and Application of Funds

In Table 1 there is shown a comparative listing of all of the Institution's sources of financial support for the past four years. Federal appropriations totaling \$74,511,000 provided 76.3 percent of the \$97,623,000 of overall operating funds in fiscal year 1975. Grants and contracts at \$12,292,000 equaled 12.6 percent, and nonfederal (private trust funds) sources accounted for 11.1 percent of the total; the proportions provided by both of these sources rose in the past year, gains which are in line with the Institution's

TABLE 1. Overall Sources of Financial Support
[\$1,000's]

Sources	FY 1972	FY 1973	FY 1974	FY 1975
OPERATING FUNDS				
Federal appropriation:				
Salaries and expenses	\$44,701	\$51,633	\$58,868	\$70,706
Smithsonian Science				
Information Exchange	1,600	1,600	1,695	1,805
Special Foreign Currency				
Program	3,500	3,500	4,500	2,000
Subtotal	\$49,801	\$56,733	\$65,063	\$74,511
Research grants and contracts . .	8,088	8,996	9,996	12,292
Nonfederal funds:				
Gifts (excluding gifts to				
endowments)				
Restricted purpose	1,598	2,901	1,970	4,177
Unrestricted purpose	26*	33*	275*	253*
Income from endowment and				
current funds investment				
Restricted purpose	1,573	1,736**	1,750	1,724
Unrestricted purpose	334	436	747	953
Revenue-producing activities				
(net)	(141)	170	1,770	2,308
Miscellaneous	482	1,069	1,110	1,405
Total nonfederal funds . .	3,872	6,345**	7,622	10,820
Total Operating Support	\$61,761	\$72,074	\$82,681	\$97,623
CONSTRUCTION FUNDS				
Federal Construction Funds:				
National Zoological Park . . .	\$ 200	\$ 675	\$ 3,790	\$ 9,420
National Air & Space Museum	1,900	13,000	17,000	7,000
Hirshhorn Museum	3,697	-0-	-0-	-0-
Restoration & Renovation of				
Buildings	550	5,014	1,070	1,490
Total Federal Construction				
Funds	\$ 6,347	\$18,689	\$21,860	\$17,910
Private Plant & Land Acquisition				
Funds:				
Cooper-Hewitt Museum	\$ 700	\$ 106	\$ 262	\$ 162
Hirshhorn Museum	-	-	1,000	-
Chesapeake Bay Center	386	149	70	15
Anacostia Neighborhood				
Museum	-	-	-	10
Total Private Plant and				
Acquisition Funds	\$ 1,086	\$ 255	\$ 1,332	\$ 187

* Excluding gifts to Associates (included under Revenue-Producing Activities).

** Includes \$225,000 of fiscal year 1973 income transferred from Endowment Fund No. 3 for this purpose in fiscal year 1972.

TABLE 2. *Source and Application of Operating Funds for Year Ended June 30, 1975*
(Excludes Special Foreign Currency Funds, Plant Funds, and Endowments)
[In \$1,000's]

Funds	Nonfederal funds						
	Federal funds	Unrestricted			Restricted		Grants and contracts
		Total non-federal funds	General	Revenue producing	Special purpose	General	
FUND BALANCES—							
1 July 1974	\$ 0-	\$ 6,792	\$ 3,477	\$ 0-	\$ 460	\$ 2,802	\$ 53
FUNDS PROVIDED							
Federal Appropriations ...	\$72,511						
Investment Income.....		\$ 2,677	\$ 950	\$ -	\$ 3	\$ 1,724	\$ -
Grants and Contracts		12,344	-	-	-	-	12,344
Gifts		4,577	46	147	207	4,177	-
Sales and Revenue		18,866	-	18,655	211	-	-
Other		1,194	228	-	330	636	-
Total Provided	\$72,511	\$39,658	\$1,224	\$18,802	\$ 751	\$6,537	\$12,344
Total Available	\$72,511	\$46,450	\$4,701	\$18,802	\$1,211	\$9,339	\$12,397
FUNDS APPLIED							
<i>Science:</i>							
Environmental Science ...	\$ 1,277	\$ 371	\$ 30	\$ -	\$ 5	\$ 46	\$ 290
Natl. Museum of Nat. History	9,260	1,338	84	-	44	216	994
Natl. Zoological Park	5,429	87	39	-	1	40	7
Fort Pierce Bureau	-	648	-	-	1	647	-
Science Info. Exchange* ..	1,805	1	1	-	-	-	-
Smithsonian Astrophysical Observatory	3,501	7,918	65	-	28	119	7,706
Radiation Biology Lab.	1,727	87	-	-	3	7	77
Smithsonian Tropical Research Institute	1,205	110	1	-	87	22	-
Interdisciplinary Communi- cations Program	-	1,244	23	-	-	15	1,206
Natl. Air and Space Museum	3,947	366	4	-	88	142	132
Other Science	1,272	1,079	8	-	15	110	946
Total	29,423	13,249	255	-	272	1,364	11,358
<i>History and Art:</i>							
Natl. Portrait Gallery	1,499	244	10	-	16	180	38
Natl. Collection of Fine Arts	2,046	66	10	-	43	11	2
Freer Gallery	380	1,088	-	-	-	1,088	-
Natl. Museum of History and Technology	4,992	660	50	-	82	467	61
Cooper-Hewitt Museum ..	209	482	2	-	-	298	182

TABLE 2. *Source and Application of Operating Funds for Year Ended June 30, 1975—continued*

[In \$1,000's]

Funds	Nonfederal funds						
	Federal funds	Unrestricted			Restricted		
		Total non-federal funds	General	Revenue producing	Special purpose	General	Grants and contracts
Archives of American Art	279	214	-	-	-	212	2
Bicentennial of the American Revolution ...	3,855	10	10	-	-	-	-
Hillwood	-	512	-	-	-	512	-
Hirshhorn Museum	1,541	110	96	-	8	-	6
Other History and Art ...	363	473	32	-	50	251	140
Total	15,164	3,859	210	-	199	3,019	431
<i>Public Service:</i>							
<i>Revenue-Producing Activities</i>							
Smithsonian Press	586	361	-	361	-	-	-
Performing Arts	482	1,205	27	558	-	303	317
Other	-	15,600	22	15,575	2	-	1
Anacostia Museum	403	42	20	-	-	12	10
Other Public Service	862	299	95	-	1	203	-
Total	2,333	17,507	164	16,494	3	518	328
<i>Museum Programs:</i>							
Libraries	1,564	-	-	-	-	-	-
Exhibits	936	10	-	-	8	-	2
Natl. Museum Act Pgms. ...	802	-	-	-	-	-	-
Other Museum Programs ..	1,867	323	32	-	4	126	161
Total	5,169	333	32	-	12	126	163
<i>Buildings Management and Protection Services</i>							
Administration	4,582	4,100	889	621	18	407	2,165
Overhead Recovered ...	-	(3,644)	(433)	(621)	(18)	(407)	(2,165)
Transfers for Designated Purposes—Out or (In) ..	-	1,691	(202)	2,308	(365)	(62)	12
Total Funds Applied	\$72,511	\$37,133	\$ 934	\$18,802	\$ 140	\$4,965	\$12,292
FUND BALANCES—							
30 June 1975	\$ -0-	\$ 9,317	\$3,767	\$ -0-	\$1,071	\$4,374	\$ 105

* Figures do not include revenues to SSIE from other sources of approximately \$800,000.

TABLE 3. *Application of Federal Appropriations
Fiscal Year 1972 through Fiscal Year 1975
(Excluding Special Foreign Currency Program)
[In \$1,000's]*

<i>Area</i>	<i>FY 1972</i>	<i>FY 1973</i>	<i>FY 1974</i>	<i>FY 1975</i>
Science	\$18,365	\$20,329	\$24,884	\$29,423
History and Art	6,285	8,022	12,130	15,164
Public Service	2,093	2,253	2,696	2,333
Museum Programs	5,881	6,660	4,321	5,169
Administration	3,235	3,987	4,693	4,582
Building Maintenance and Protection	10,442	11,982	11,839	15,840
Total	<u>\$46,301</u>	<u>\$53,233</u>	<u>\$60,563</u>	<u>\$72,511</u>

goal of restoring a better balance between federal and nonfederal support. Construction funds totaling just over \$18,000,000 in fiscal year 1975 continue to be provided almost exclusively by federal appropriations.

The application in fiscal year 1975 of all of these funds (excluding Special Foreign Currency funds, Plant funds and Endowment funds) to Smithsonian's diverse activities is set forth in Table 2. Detailed discussion of the various types of income and their uses follow.

FEDERAL OPERATING FUNDS

For fiscal year 1975, Congress provided \$70,706,000 of appropriated funds for the Smithsonian's normal operating purposes ("salaries and expenses"), a generous increase of \$11,838,000 over the preceding year.

Of this increase, \$6,500,000 was devoted primarily to furthering the three high-priority program objectives followed in fiscal year 1974, namely: (1) continued preparation for opening of the new National Air and Space Museum in July 1976; (2) development of Bicentennial activities; and (3) further strengthening of the many services needed for the protection, care, and cataloguing of collections and support for related research. The remaining 45 percent,

TABLE 4. *Special Foreign Currency Program*
Fiscal Year 1975 Obligations
 [In \$1,000's]

Country	Archeology	Systematic & Environmental Biology	Astrophysics & Earth Sciences	Museum Programs	Grant Administration	Total
India	\$ 196,206	\$ 69,740	\$ 34,900	\$ 48,472	\$ 96,631	\$ 445,949
Egypt	1,322,685	16,796	10,125	17,900	1,800	1,369,306
Pakistan	101,901	94,390	-	3,948	435	200,674
Poland	4,826	68,497	165,449	185,728	-	424,500
Tunisia	326,175	459,231	2,431	622	1,473	789,932
Burma	-	-	-	36	-	36
Total	\$1,951,793	\$708,654	\$212,905	\$256,706	\$100,339	\$3,230,397

or about \$5,300,000, plus an estimated \$2,000,000 more used for other purposes last year, was required to meet the costs of legislated and other uncontrollable increases in federal salaries, severe increases in utility and rental rates, and the inflationary rise in prices of other materials and services. An additional \$1,805,000 was provided for the work of the Smithsonian Science Information Exchange, a separately incorporated organization, engaged in recording, classifying and furnishing information on a wide variety of on-going research projects in such fields as water resources and medical and environmental studies. Its scope and usefulness has been expanding rapidly in recent years. The allocation of these federal operating funds among major categories of Institutional endeavor may be found in Table 3.

Additional appropriated funds for Smithsonian's Foreign Currency Program were greatly reduced in fiscal year 1975 to \$2,000,000, of which \$1,000,000 was reserved for the second of four equal payments to cover the United States' participation in UNESCO's international campaign to preserve archeological monuments on the Island of Philae in Egypt. Remaining amounts of these blocked foreign currencies allocated to the Smithsonian are awarded to universities and similar United States organizations to conduct research studies in a number of foreign countries (see Table 4).

FEDERAL CONSTRUCTION FUNDS

Federal appropriations for construction purposes in fiscal year 1975 amounted to \$10,910,000 plus \$7,000,000 more toward continued payments for the new National Air and Space Museum under contract authority provided in fiscal year 1973. The advisability of completing, over about a ten-year period, the phased renovation of the National Zoo in accordance with its approved master plan was given strong recognition in the boost to \$9.4 million in funds for this purpose. This fiscal year 1975 allotment will go toward construction of the new elephant and bird house environs and an education and administration building. The \$1.5 million granted toward restoration and renovation of buildings will, among other things, provide for installation of fire control systems, repairs to the old Arts and Industries Building, and improvements to the unsightly grounds south of the "Old Castle" Building.

GRANTS AND CONTRACTS

In recent years a major portion of the research projects of the Institution have been funded by grants and contracts from federal agencies, and in fiscal year 1975 this contribution increased significantly to more than \$12 million. As detailed in Table 2, the science programs of the Institution benefited in largest measure; the Smithsonian Astrophysical Observatory accounted for more than one-half of these funds, receiving support from the National Aeronautics and Space Administration for such projects as a Doppler tracking experiment for the Apollo-Soyuz project, meteor studies, and the satellite tracking program. Other awards to the Smithsonian covered such diverse programs as investigations on endangered plant species and a study of international oil spills to research on the ethnic origins of man in America and abroad, and a compilation of the papers of the artist Charles Willson Peale. A breakdown of the major granting agencies to the Smithsonian, together with the funds expended over the past four years, is shown in Table 5.

PRIVATE TRUST FUNDS

From 1846, the year in which Congress passed legislation establishing the Smithsonian Institution, until 1858, when the first federal

TABLE 5. *Grants and Contracts*
[In \$1,000's]

<i>Federal Agencies</i>	FY 1972	FY 1973	FY 1974	FY 1975
Atomic Energy Commission	\$ 73	\$ 76	\$ 72	\$ 84
Department of Commerce	392	203	184	242
Department of Defense	916	969	872	799
Department of Health, Education and Welfare	411	306	261	219
Department of Interior	247	230	283	246
Department of Labor	11	51	163	87
Department of State	195	593	1,066	1,549
National Aeronautics and Space Administration	4,605	4,923	5,308	7,670
National Endowments for the Arts and Humanities	35	58	102	420
National Science Foundation	560	957	690	502
Other	643	630	995	474
Total	\$8,088	\$8,996	\$9,996	\$12,292

operating funds were appropriated for the use of the Institution (\$4,000), the current needs of the Smithsonian were met from the investment income of James Smithson's bequest to the American people. As Congress entrusted additional responsibilities to the Smithsonian, however, together with the annual appropriations to fulfill them, the federal portion of the Institution's budget grew, exceeding \$1,000,000 in 1927 and \$10,000,000 in 1963. While the private resources have also grown substantially since these early days, the maintenance of the uniquely federal-private nature of the Smithsonian requires constant efforts to increase our private sources of income.

In fiscal year 1975, these efforts again met with success, and the total private funds income to the Institution from gifts, investment income, revenue-producing activities, fees, and other revenues totaled \$11,007,000 compared to the prior year's level of \$8,954,000. The private trust funds provided 11 percent of the total operating support of the Institution, up from 9 percent last year. In addition, gifts and fund-raising efforts provided \$187,000 for plant improvements, principally for the Cooper-Hewitt Museum (see Table 6).

TABLE 6. *Total Private Funds Income Fiscal Year 1975*

[In \$1,000's]

Revenue Sources	Unrestricted Purposes			Total
	General & Revenue-producing	Special purposes*	Restricted purposes	
FOR OPERATING PURPOSES:				
Investments	\$ 950	\$ 3	\$1,724	\$ 2,677
Gifts	46**	207	4,177	4,430
Revenue-Producing Activities	2,308	—	—	2,308
Concessions and Miscellaneous	228	541	636	1,405
Total Operating Funds	<u>\$3,532</u>	<u>\$751</u>	<u>\$6,537</u>	<u>\$10,820</u>
FOR PLANT:				
Gifts—				
Anacostia Neighborhood Museum ..	\$ —	\$ —	\$ 10	\$ 10
Chesapeake Bay Center	—	—	15	15
Cooper-Hewitt Museum	—	—	51	51
Total Gifts	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 76</u>	<u>\$ 76</u>
Miscellaneous—				
Cooper-Hewitt Museum	\$ —	\$ —	\$ 111	\$ 111
Total Plant	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 187</u>	<u>\$ 187</u>
Grand Total	<u>\$3,532</u>	<u>\$751</u>	<u>\$6,724</u>	<u>\$11,007</u>

* Represents unrestricted income designated by management to be used only for specific purposes.

** Excluding \$145,000 gifts to Associates and \$2,000 gifts to Press (included under Revenue-Producing Activities).

Unrestricted Private Funds

In fiscal year 1975 the Institution was able to continue last year's pattern of generating unrestricted income excess to its immediate operating needs. While administrative expenses grew, along with the number of research and museum projects dependent on these unrestricted funds, it was nevertheless possible to take a major step toward our goal of building the Institution's endowments by a transfer of \$1,442,000 from current into unrestricted endowment funds. It is our intention to make similar transfers annually to the

extent compatible with current needs, in order to strengthen the Institution's private resources for the future.

As shown in Table 7, total unrestricted income rose 20 percent this past year to a record level of \$3,532,000. Despite a proportionately large rise in administrative expense due to salary in-

TABLE 7. *Unrestricted Private Funds
General and Revenue-Producing Activities*
(Excluding Special Purpose Funds and Gifts to Endowment)
[In \$1,000's]

<i>Item</i>	<i>FY 1972</i>	<i>FY 1973</i>	<i>FY 1974</i>	<i>FY 1975</i>
INCOME				
General Income:				
Investments	\$ 334	\$ 436	\$ 744	\$ 950
Gifts	26	33	151	46
Concessions and Miscellaneous..	197	374	284	228
Total General Income	557	843	1,179	1,224
Revenue-Producing Activities:				
Associates	76	287	1,590	1,968
Shops	19	47	226	417
Press	(111)	(109)	(89)	(96)
Performing Arts	(50)	(65)	104	(79)
Product Development	-	69	37	218
Other Activities	(75)	(59)	(98)	(120)
Total Activities	(141)	170	1,770	2,308
Total Income	416	1,013	2,949	3,532
EXPENDITURES				
Administrative Expense	2,956	3,097	3,957	4,780
Less Administrative Recovery	2,639	2,772	3,345	3,644
Net Administrative Expense	317	325	612	1,136
Net Gain (Loss) Before Transfers ..	99	688	2,337	2,396
Less Transfers:				
To Plant	-	-	1,134	97
To Endowment	21	21	121	1,463
Other (Net)	17	124	307	546
Net Gain (Loss) After Transfers ...	61	543	775	290
Ending Balance	\$1,781	\$2,292*	\$3,477*	\$3,767

* Adjusted to reflect reclassification to Plant Funds of \$32,000 net investment in capitalized equipment in fiscal year 1974 and \$410,000 reclassification from Plant Funds to Current Funds in fiscal year 1975.

creases, other inflationary pressures, and a greater number of allotments to Smithsonian bureaux for special needs, the net gain before transfers for special purposes was nevertheless higher than last year. These transfers, described below, also exceeded those of the prior year, but left some \$290,000 to be added to the unrestricted fund balance at year's end, raising it to \$3,767,000, a level more compatible with the Institution's working capital needs.

Investment income, partly from unrestricted endowment and partly from short-term investment of current funds, increased to \$950,000 this past year; of this income, however, approximately \$190,000 was transferred to Smithsonian bureaux as interest on their restricted-purpose fund balances. Unrestricted gift income decreased, indicating once again the difficulty of obtaining support for general purposes. As has been the case in the prior two years, the major contributors to the Institution's unrestricted budget were the educational and revenue-producing activities, which have proven able, not only to cover their costs in extending Smithsonian programs beyond the geographical limits of Washington, but also to generate funds to supplement other research and museum programs of the Institution.

The Associates program, now ten years old, offers its various categories of members such benefits as tours, lectures, exhibit openings, special restaurant facilities, courses of study, discounts on Museum Shop merchandise, and, of course, the *Smithsonian* magazine. This program, with a membership in excess of 900,000 at year's end, is enabling the Smithsonian to subsidize important research projects for which funds would not otherwise be available, as well as to improve our educational services to the public. Due in large measure to the success of this program, the Institution will be able to construct special facilities in Washington during the Bicentennial year to welcome the ever-increasing number of visitors to our museums.

Substantial investments of time and money in the Museum Shops, to improve the quality and relevance of the merchandise as well as the physical design of the shops themselves, has resulted in a further gain in net income, to a level of \$417,000. One-third of these gains (\$139,000) was transferred directly back to the individual museums in which the shops are located for public education programs and purchases for the collections. The Product

Development Program received net royalties of \$218,000 from the sale by outside manufacturers of licensed products developed in concert with Smithsonian staff and related to the national collections. As with Museum Shops' gains, distributions were made to participating bureaux totaling \$83,000. Detail on these and other activities is shown in Table 8.

From the net gain of \$2,396,000, transfers were made as noted above to Endowment (\$1,442,000 to Unrestricted, and \$21,000 to Restricted Endowment), and to the Bureaux from Revenue-Producing Activities (\$222,000). In addition, transfers were made for land acquisition at the Chesapeake Bay Center (\$97,000), operation of the Cooper-Hewitt Museum (\$34,000), special research grants to Smithsonian scientists (\$102,000), payment of interest to bureaux on their restricted and special purpose funds (\$194,000), and miscellaneous incoming transfers of \$6,000.

TABLE 8. *Revenue-Producing Activities for Fiscal Year 1975*
[In \$1,000's]

<i>Item</i>	<i>Total</i>	<i>Museum Shops</i>	<i>Smithsonian Press*</i>	<i>Smithsonian Associates</i>	<i>Per-forming Arts</i>	<i>Product Development</i>	<i>Other**</i>
Sales and Revenues ..	\$18,459	\$3,211	\$189	\$13,524	\$436	\$302	\$797
Less Cost of Sales ...	8,310	1,802	169	5,977	68	-	294
Gross Income .	10,149	1,409	20	7,547	368	302	503
Gifts	147	-	2	145	-	-	-
Other Income	196	10	74	41	43	-	28
Total Income .	10,492	1,419	96	7,733	411	302	531
Expenses	7,563	902	180	5,352	442	79	608
Administrative Costs	621	100	12	413	48	5	43
Income (Loss) Before							
Transfers	2,308	417	(96)	1,968	(79)	218	(120)
Less Transfers	219	139***	-	-	-	83***	(3)
Net Income (Loss) ..	\$ 2,089	\$278	\$(96)	\$ 1,968	\$(79)	\$135	\$(117)

* The privately funded activities of the Press as opposed to the federally supported publication of research papers.

** Includes Traveling Exhibitions, Belmont Conference Center, Photo Sales, "Commons" Restaurant, Center for Short-Lived Phenomena, Special Publications and Television Programs.

*** Allocations to the Smithsonian bureaux participating in this program.

Special Purpose funds are set out separately in Table 6 as well as in Table 2. These moneys include unrestricted gifts to particular bureaux (\$207,000) and receipts from various bureau enterprises (\$541,000), such as parking at the National Zoological Park or sale of commemorative envelopes at the National Air and Space Museum, which are then reserved for improvement of facilities or exhibits. The balance of these funds at June 30, 1975, was \$1,071,000, compared with \$460,000 in 1974. This substantial increase, despite the use of more than \$500,000 of such funds for numerous bureaux as shown in Table 2, reflects both the income noted above as well as the transfers from Revenue-Producing Activities and the payment of interest on fund balances.

Restricted Private Funds

The Institution also received \$6,537,000 in fiscal year 1975 for a wide variety of specified, or "restricted," operating purposes, as compared to \$4,266,000 in fiscal year 1974. This total includes gifts and grants of \$4,177,000, endowment income of \$1,724,000, and miscellaneous revenues of \$636,000; a partial breakdown showing the principal recipients appears in Table 9.

Endowment income provided the major operating support for the Freer Gallery of Art and the Fort Pierce Bureau, with the remainder of the endowment funds (outlined below) benefiting projects throughout the Institution. The gifts and grants to the Institution are far too numerous to describe fully, although a partial listing of donors follows this report. Their support to the restricted funds, however, provided the greater portion of the operating budgets of the Cooper-Hewitt Museum of Decorative Arts and Design and Hillwood, the former estate of Mrs. Marjorie Merriweather Post. Major support was provided to the National Air and Space Museum by gifts from the Summa Corporation for general exhibits purposes and from the German Federal Republic for construction and equipping of its new Spacearium; these gifts are of immense value to the Institution in its commitment to open this museum on July 4, 1976. Another Bicentennial project which received important funding was the Division of Performing Arts

TABLE 9. *Restricted Operating Private Funds,* Fiscal Year 1975*
[In \$1,000's]

Fund	Income					Deductions	Transfers in (out)	Net increase (decrease)	Fund balance end of year
	Investment	Gifts	Miscellaneous	Total income					
Archives of American Art	\$ 4	\$ 22	\$263	\$ 289	\$ 212	\$39	\$ 116	\$ 321	
National Museum of History and Technology:									
American Banking Exhibit	-	115	-	115	111	-	4	272	
American Maritime Hall	-	182	-	182	179	16	19	185	
Cooper-Hewitt Museum:									
Operations	6	74	27	107	228	121	-	-	
Funds for Collections and other									
Special Purpose Funds	-	283	5	288	70	6	224	806	
Division of Performing Arts	-	707	-	707	303	3	407	342	
Fort Pierce Bureau	525	-	1	526	645	(68)	(187)	5	
Freer Gallery	839	12	169	1,020	1,088	2	(66)	125	
Hillwood	-	517	15	532	512	(1)	19	98	
National Air & Space Museum ..	-	814	30	844	142	15	717	780	
Woodrow Wilson Center**	-	448	2	450	198	(5)	247	241	
Other	350	1,003	124	1,477	1,339	(66)	72	1,199	
Total Restricted Funds ...	\$1,724	\$4,177	\$636	\$6,537	\$5,027	\$62	\$1,572	\$4,374	

* Excluding Grants and Contracts shown in Table 5 and also Restricted Plant Funds included in Table 6.

** Included herein even though federal funds of the Center are not a part of this report, since the Smithsonian is by legislative act the official recipient and custodian.

which plans an extended Festival of American Folklife in the summer of 1976; grants from General Foods Corporation and American Airlines are reflected in Table 9, with further payments from these corporations expected in fiscal year 1976. Generous support received from inland waterways transportation firms is making possible further progress toward the building of an exciting new American Maritime Hall in the National Museum of History and Technology.

The Woodrow Wilson International Center for Scholars received substantial grants both for on-going projects as well as for the establishment of the new Institute for Advanced Russian Studies, announced during this past year.

Miscellaneous receipts from the Freer Gallery sales desk and

special fund-raising activities of the Archives of American Art gave significant assistance to those programs.

As mentioned on page 35, another \$187,000 of restricted funds was also received for plant construction purposes, principally for renovation of the Carnegie Mansion, new home of the Cooper-Hewitt Museum. An additional \$1,000,000 for this purpose is still being sought.

Endowment Funds

The Smithsonian endowment funds had a market value on June 30, 1975, of \$41,939,000. They consist of the Freer Fund, whose income is used solely by the Freer Gallery of Art; Endowment Fund No. 3, which supports oceanographic research at the Fort Pierce Bureau in Florida; other restricted funds, maintaining a large number of research projects; and unrestricted funds. As of July 1, 1974, all Smithsonian endowment funds, exclusive of \$1,000,000 held in perpetuity in the U. S. Treasury, and some \$72,700 of miscellaneous securities, were pooled into the Consolidated Endowment Fund in order to facilitate investment management; separate accounting and administration continues, however, to be maintained on each fund in this pool. Table 10 shows the market values of these funds since 1971, reflecting additions from donations and reinvestment of income, limited withdrawals, and changes in securities valuations.

The investment of the endowment funds of the Institution is managed by three professional advisory firms, under the close

TABLE 10. *Market Value of Endowment Funds*
[In \$1,000's]

<i>Fund</i>	6/30/71	6/30/72	6/30/73	6/30/74	6/30/75
Freer	\$18,805	\$21,973	\$18,279	\$14,250	\$15,744
Endowment No. 3	12,331	14,641	13,196	11,128	12,321
Unrestricted funds	4,404	5,102	4,759	3,906	5,654
Restricted funds	7,066	8,185	7,634	6,266	7,148
Total	\$42,606	\$49,901	\$43,868	\$35,550	\$40,867

surveillance of the Investment Policy Committee and the Treasurer, and subject to policy guidelines set by the Smithsonian's Board of Regents. In 1972 the Board of Regents adopted the total return policy, under which the income paid to each endowment fund in the subsequent fiscal year is determined each March 31 by computing 4½ percent of the running five-year average of market values, adjusted for additions or withdrawals of capital. By selecting a fixed rate of return, regardless of what the actual yield may be, the investment advisors may select securities for growth as well as present yield, without being limited by the need to achieve a specified dividend and interest income level.

One of the goals of the Smithsonian administration has been to increase our endowment funds, particularly those for unrestricted uses, which are still minimal in relation to the size of the Institution, providing only a small fraction of one percent of the total operating income. Due to the unrestricted current funds surplus achieved for fiscal year 1975, it was possible, as described above, to transfer \$1,422,000 into the unrestricted endowment funds, and further such transfers will be a major priority in future years. Table 11 reflects the changes in the endowment funds this past year due to this transfer, reinvestment of income in certain restricted funds, donations, and stock market action. The substantial increase in market values over the year of \$3,930,000 is attrib-

TABLE 11. *Changes in Endowment Funds for Fiscal Year 1975*
[In \$1,000's]

Fund	Market value 6/30/74	Gifts and trans- fers	Interest and divi- dends*	Income paid out	Sub- total	Increase in market value	Market value 6/30/75
Freer Fund	\$14,250	\$ -	\$ 663	\$ 839	\$14,074	\$1,670	\$15,744
Endowment No. 3	11,128	68	539	525	11,210	1,111	12,321
Unrestricted funds	3,906	1,442	186	203	5,331	323	5,654
Restricted funds	6,266	84	316	344	6,322	826	7,148
Total	<u>\$35,550**</u>	<u>\$1,594</u>	<u>\$1,704</u>	<u>\$1,911</u>	<u>\$36,937</u>	<u>\$3,930</u>	<u>\$40,867**</u>

* Income earned less managers' fees.

** Not including Endowment Funds of \$1,000,000 held in U.S. Treasury, carrying 6 percent interest, nor minor amount of miscellaneous securities treated separately.

TABLE 12. Consolidated Endowment Funds
June 30, 1975

<i>Funds participating in pool</i>	<i>Principal</i>		<i>Income</i>	
	<i>Book value</i>	<i>Market value</i>	<i>1975 Net income</i>	<i>Unexpended balance</i>
FREER	\$15,324,967	\$15,743,612	\$ 839,354	\$123,631
ENDOWMENT NO. 3	12,249,146	12,320,695	525,114	—
UNRESTRICTED FUNDS	5,848,197	5,654,142	203,373	—
RESTRICTED FUNDS:				
Abbott, William L.	201,567	207,532	10,020	2,277
Archives of American Art*	—	—	1,024	—
Armstrong, Edwin James	4,129	3,678	173	—
Arthur, James	58,605	77,876	3,760	1,563
Bacon, Virginia Purdy	176,767	161,967	7,820	16,532
Baird, Spencer Fullerton	53,885	69,613	3,361	45
Barney, Alice Pike	42,032	55,806	2,695	7,725
Barstow, Frederic D.	1,932	1,987	96	1,902
Batchelor, Emma E.	64,533	57,725	2,787	8,854
Beaugard, Catherine Memorial Fund	73,964	77,552	3,745	4,133
Becker, George F.	303,620	280,334	13,536	307
Brown, Roland W.	48,642	53,224	2,570	8,865
Canfield, Frederick A.	55,035	85,801	4,143	1,893
Casey, Thomas Lincoln	24,241	25,001	1,207	3,063
Chamberlain, Frances Lea	41,269	54,794	2,646	5,959
Cooper, G. Arthur, Curator's Fund	3,144	3,003	130	—
Cooper-Hewitt Museum	152,251	134,564	6,497	—
Desautels, Paul E.	11,645	12,627	198	—
Div. of Mammals Curator Fund. . .	3,205	3,182	154	1,382
Div. of Reptiles Curator Fund ...	959	941	45	141
Drake, Carl J.	277,202	262,355	12,508	30,209
Dykes, Charles	83,258	85,827	4,144	16,622
Eickemeyer, Florence Brevoort ...	15,930	21,142	1,021	3,315
Guggenheim, David and Florence ..	228,910	199,823	9,648	—
Hanson, Martin Gustav and Caroline Runice	17,192	17,722	856	1,727
Henderson, Edward P., Meteorite Fund	590	692	33	33
Hillyer, Virgil	12,711	13,111	633	3,402
Hitchcock, Albert S.	2,308	3,119	151	236
Hrdlicka, Ales and Marie	90,934	96,952	4,681	5,606
Hughes, Bruce	28,046	37,288	1,800	24,096
Johnson, E. R. Fenimore	15,706	13,121	634	5,366
Kellogg, Remington, Memorial ...	46,668	38,189	1,835	3,278
Lindsey, Jessie H.	560	548	26	1,030
Loeb, Morris	168,848	175,769	8,487	437
Long, Annette E. and Edith C. ...	794	1,085	52	284
Lyons, Marcus Ward	8,424	7,084	342	—
Maxwell, Mary E.	28,741	38,205	1,845	7,806
Myer, Catherine Walden	39,074	40,283	1,945	3,625

TABLE 12. Consolidated Endowment Funds
June 30, 1975—continued

Funds participating in pool	Principal		Income	
	Book value	Market value	1975 Net income	Unex- pended balance
Nelson, Edward William	35,153	43,264	2,089	2,089
Noyes, Frank B.	1,874	2,030	98	1,335
Pell, Cornelia Livingston	14,349	14,871	718	3,067
Petrocelli, Joseph, Memorial	10,858	14,491	700	7,883
Ramsey, Admiral and Mrs. DeWitt Clinton	507,359	430,685	20,759	26,237
Rathbun, Richard, Memorial	20,584	21,308	1,029	11,785
Reid, Addison T.	34,396	35,456	1,712	2,323
Roebing Collection	176,974	233,713	11,284	—
Roebing Solar Research	47,877	45,813	2,212	—
Rollins, Miriam and William	290,173	337,235	16,078	956
Ruef, Bertha M.	61,253	51,136	2,469	3,599
Smithsonian Agency Account	200,933	173,087	7,891	—
Sprague, Joseph White	2,128,377	2,028,893	96,734	25,405
Springer, Frank	26,282	34,875	1,684	21,810
Stevenson, John A.	9,052	9,475	458	458
Strong, Julia D.	19,348	20,023	967	4,726
T.F.H. Publications, Inc.	16,793	16,213	715	7,894
Walcott, Charles D.	185,976	210,940	10,057	5,149
Walcott, Charles D. and Mary Vaux	674,384	894,812	43,205	11,417
Walcott Botanical Publications	85,193	108,546	5,241	2,643
Zerbee, Francis Brinckle	1,392	1,833	89	1,807
Total Restricted Funds	\$ 6,935,901	\$ 7,148,221	\$ 343,437	\$312,296
Total Consolidated Endowment Funds	\$40,358,211	\$40,866,670	\$1,911,278	\$435,927

* Transferred to Current Funds 6/30/75; Book Value \$20,925, Market Value \$21,106.

table primarily to the sharp upswing in the stock market, and the Smithsonian funds performed somewhat better during this period than the generally accepted market indexes.

Income of \$1,911,000, net of managers and custodial fees, was paid out during the year under the total return policy, which was \$207,000 in excess of actual dividend and interest yield. A breakdown of the income to the various funds participating in the Consolidated Endowment Funds is shown in Table 12, together with

the book and market values of those funds. Table 13 provides detail on the types of securities held by the Institution. A listing of the individual investments held in the Consolidated Endowment Funds at June 30, 1975, may be obtained upon request to the Treasurer of the Institution.

TABLE 13. *Endowment and Similar Funds Summary of Investments*

<i>Accounts</i>	<i>Book value</i> 6/30/75	<i>Market value</i> 6/30/75
INVESTMENT ACCOUNTS		
Consolidated Endowment Funds:		
Cash and Equivalents	\$ 1,108,888	\$ 1,108,888
Bonds	8,072,361	7,717,817
Convertible Bonds	2,579,706	2,446,265
Stocks	28,597,256	29,593,700
Total	\$40,358,211	\$40,866,670
Miscellaneous:		
Cash	\$ 731	\$ 731
Bonds	9,769	9,600
Common Stocks	3,572	13,987
Total	\$ 14,072	\$ 24,318
Total Investments Accounts	\$40,372,283	\$40,890,988
Other Accounts:		
Notes Receivable	\$ 48,354	\$ 48,354
Loan to U. S. Treasury in Perpetuity	1,000,000	1,000,000
Total Other Accounts	\$ 1,048,354	\$ 1,048,354
Total Endowment and Similar Fund Balances	\$41,420,637	\$41,939,342

Accounting and Auditing

The Private Trust Funds of the Institution, as well as the accounts of Smithsonian Science Information Exchange, Inc., the Smithsonian Research Foundation, and Reading Is Fundamental, Inc., are audited annually by independent public accountants. Their report for fiscal year 1975 on the Smithsonian is contained in the following pages, including a comparative balance sheet and a statement of changes in the various fund balances.

The Defense Contract Audit Agency annually performs an audit on grant and contract moneys received from federal agencies. In addition, the federally appropriated funds of the Institution are subject to audit by the General Accounting Office. The internal audit staff continues to conduct audits throughout the wide range of Smithsonian activities and contributes greatly to smooth administrative and financial management.

Gifts and Bequests to the Smithsonian

The Smithsonian Institution gratefully acknowledges gifts and bequests received during fiscal year 1975 from the following:

\$100,000 or more:

American Bankers Association	Hillwood Trust
American Airlines, Incorporated	S. C. Johnson & Son, Inc.
Anonymous	Mobil Foundation, Inc.
Federal Republic of Germany	The Marjorie Merriweather Post Foundation of D. C.
General Foods Corporation	Summa Corporation

\$10,000 or more:

American Commercial Barge Line Company	Exxon Corporation
American Telephone and Telegraph Company	Firestone Foundation
The Arcadia Foundation	The Ford Foundation
Atlantic Richfield Foundation	The General Electric Foundation
The Brown Foundation	Mary L. Griggs and Mary G. Burke Foundation
The Morris & Gwendolyn Cafritz Foundation	The Hillman Foundation, Inc.
CBS Foundation, Inc.	Interdisciplinary Communication Associates, Inc.
Charron Foundation	The J. M. Kaplan Fund, Inc.
Continental Grain Company	Lake Carriers' Associations
Mrs. David Craven	The Robert Lehman Foundation
Crowley Maritime Corporation	Howard and Jean Lipman Foundation, Inc.
Doubleday & Company, Inc.	Mr. Vasco McCoy, Jr.
The Henry L. and Grace Doherty Charitable Foundation, Inc.	State of Mississippi
The Charles Engelhard Foundation	Mobil Oil Corporation
The Eppley Foundation for Research	National Geographic Society
The T. M. Evans Foundation	New York State Council on the Arts
	Edward John Noble Foundation

\$10,000 or more—continued

Mr. and Mrs. David Packard	Surdna Foundation, Inc.
Pepsi Cola Company Foundation, Inc.	The Allie L. Sylvester Fund, Inc.
Phelps-Dodge Corporation	The Tobacco Institute, Inc.
Marjorie Merriweather Post	United Seamen's Service
Foundation u/a dated July 20, 1956	Dr. and Mrs. Jeremy P. Waletzky
The Relm Foundation	Matilda R. Wilson Fund
Rockefeller Brothers Fund	The Women's Committee of the
Estate of Gertrude Sampson	Smithsonian Associates
Sears, Roebuck and Company	World Wildlife Fund
St. Lawrence Seaway Commission	Xerox Corporation

\$1,000 or more:

The Ahmanson Foundation	The Bundy Foundation
Alcoa Foundation	Dr. and Mrs. I. F. Burton
American Can Company Foundation	Canal Barge Company, Inc.
Allied Chemical Foundation	Cargo Carriers, Inc.
American Express Foundation	Carter Hawley Hale Stores, Inc.
American College of Dentistry	Caterpillar Tractor Company
American Institute of Marine	Mrs. David Challinor
Underwriters	Chase Manhattan Bank
American Institute of Merchant	Mr. Peter B. Clark
Shipping	The Coca Cola Company
American Law Institute	Community Funds, Inc.
American Metal Climax	Continental Oil Company
Foundation, Inc.	Mrs. Adolph Coors III
American National Standard Institute	Copernicus Society
American Studies Association	Corning Glass Works
Amoco Foundation, Inc.	Dr. William H. Crocker
The Annenberg School of	Dr. and Mrs. Burrill Crohn
Communications	Dana Corporation Foundation
Anonymous	Mr. Paul L. Davies
Miss Amelia E. Anthony	Deere & Company
Arthur-Smith Corporation	Mr. and Mrs. Henry H. Dewar
Ashland Oil, Inc.	Dow Chemical U.S.A.
AVCO Corporation	Elsie DeWolfe Foundation
The Barra Foundation, Inc.	Dixie Carriers, Inc.
Mrs. Frederic C. Bartlett	Mr. Joseph W. Donner
The Bass Foundation	Ms. Ann Dreyfuss
Bath Iron Works Corporation	Mr. John A. Dreyfuss
Battelle Laboratories	Earhart Foundation
The Bedminster Fund, Inc.	The Ferdinand Eberstadt Foundation
Beneficial Foundation	Mr. and Mrs. Joel S. Ehrenkranz
Bethlehem Steel Corporation	Miss Edith Ehrman
Miss Helen Bissell	El Paso Natural Gas Company
Dr. and Mrs. Arthur Bloom	Mr. Alfred U. Elser, Jr.
Mrs. Beulah Boyd	Milton S. Erlanger, Trust
Mr. Daniel J. Boorstin	Eso Middle East
The Boswell Oil Company	Farrell Lines, Inc.

- Fieldcrest Mills, Inc.
First National Bank in Palm Beach
Mr. and Mrs. Benson Ford
Mrs. Edsel Ford
Mr. and Mrs. Walter B. Ford II
Ford Motor Company Fund
General Telephone & Electronics
Foundation
Sumner Gerard Foundation
The Gilman Foundation
Gladders Barge Line, Inc.
Mr. Alfred C. J. Glassell, Jr.
Josephine Graf Foundation
Mr. and Mrs. Rudolph F. Greiser
Mr. Chaim Gross
Mr. M. D. Guinness
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Mrs. Anne B. Harrison
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The Hecht Company
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Mr. C. Heurich, Jr.
Mr. Louis W. Hill, Jr.
Hiram Walker & Sons, Inc.
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Imperial Embassy of Iran
The Institute for Intercultural
Studies, Inc.
Institute of Psychiatry & Foreign
Affairs
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International Association of Plant
Taxonomy
International Council for Bird
Preservation Pan American Section
Mr. James E. Jarnagin
Mr. and Mrs. C. S. Justman
Edgar J. Kaufmann Charitable
Foundation
Mrs. Harold J. Kersten
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Mr. Harold F. Linder
The Link Foundation
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S. C. Loveland, Co., Inc.
Mrs. Percy C. Madeira, Jr.
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Maritime Overseas Corporation
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McCormick Foundation
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McGraw Hill, Inc.
Mrs. Nancy M. McNeil
Mr. Robert L. McNeil, Jr.
Merck & Company
Mrs. Margaret Carnegie Miller
Mrs. Irene Morden
National Bank of Detroit
National Steel & Shipbuilding
Company
Newport News Shipbuilding
Olin Corporation Charitable Trust
Mr. and Mrs. Dan Oppenheimer
Optimus Productions Ltd.
PACCAR Foundation
J. C. Penney Company, Inc.
James C. Penney Foundation, Inc.
Philip Morris Incorporated
The Pioneer Foundation, Inc.
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Anne S. Richardson Fund
Josephine C. Robinson Foundation
Estate of Berenice Schwieder
Security Storage Company of
Washington
Misses Elsie and Dorothy Shaver
Mr. and Mrs. Alger Shelden
Shipbuilders Council of America
The Sidney Printing and Publishing
Company
Mr. Charles Simons
Mrs. Frances F. Smith
Mr. and Mrs. James K. Smith
Standard Oil Company of California
Mrs. Shirley Watkins Stein
Mr. and Mrs. Mark Stevens
The Symonds Foundation
Tauber Oil Company
Mr. and Mrs. Bertrand L. Taylor III
Time Incorporated
Trust Company of Georgia
Foundation
T.R.W. Foundation, Inc.

\$1,000 or more—continued

UNESCO	WGBH Public Broadcasting, Boston
Union Mechling Corporation	Ms. Gail D. Wilson
University of Michigan	Woodward and Lothrop, Inc.
University of Washington	Woolworth and Woolco Stores
Walco National Corporation	Worthington Sales Company
Mr. Richard W. Weatherhead	Charles W. Wright Foundation of Badger Meter, Inc.
Ellen Bayard Weedon Foundation	Young Men's Christian Association
Mr. and Mrs. Joseph Weinstein	Mr. and Mrs. Robert Zell
Mr. Royce S. Weisenberger, Jr.	
Westinghouse Electric Corporation	

\$500 or more:

Mr. and Mrs. Philip W. Amram	Mr. and Mrs. Sebastian Gaeta
Mr. Thomas D. Anderson	General Agents and Managers Conference of N.A.L.V.
Anonymous	Mr. and Mrs. W. T. Gillham
Arizona Historical Society	Mr. Herbert R. Glaser
Mr. and Mrs. James C. Barbour	Reverend and Mrs. C. Leslie Glenn
Mr. and Mrs. Bernhard G. Bechhoefer	Mr. Frederick R. Goff
Mr. and Mrs. Roger K. Becker	The B. F. Goodrich Company
Mr. and Mrs. John M. Begg	Mr. and Mrs. William A. Gordon
Mr. and Mrs. Spencer M. Berger	Mr. Gilbert Greenway
Mr. and Mrs. J. Pierre Bernard	Mr. and Mrs. T. R. Grosvenor
Mr. Frank E. Bevens, Jr.	Mr. and Mrs. William A. Henry
Mr. and Mrs. C. William Bliss	Mrs. Maxine Harrison
Bloomington Brothers	Estate of Calvin Hathaway
Mrs. Neville J. Booker	Mr. and Mrs. Curtis L. Hillyer
Mr. and Mrs. Joseph E. Brown	Mr. and Mrs. Albert G. Hoffman
Dr. Erika Bruck	Mr. and Mrs. Hugh H. Honnen
Dr. and Mrs. Curt F. Buhler	Mr. and Mrs. Samuel G. Houghton
Mr. and Mrs. Edward P. Bullock	Miss Dora Ide
Mr. Hugh Bullock	Mr. and Mrs. Frank N. Ikard
Campbell Barge Line, Inc.	Irving One Wall Street
Mr. and Mrs. William F. Cassidy	Mr. and Mrs. Joseph D. Isaacson
Mr. and Mrs. Blair Childs	Mr. William Jamison
Copley Newspapers	Mr. and Mrs. B. F. Jones
Mr. Julien Cornell	Atwater Kent Foundation, Inc.
Mr. and Mrs. F. W. Corwin	Mr. and Mrs. Morris Ketchum
Mr. and Mrs. George L. Craig	Mr. and Mrs. Edward F. Knight
Mr. and Mrs. B. W. Crain, Jr.	Mr. and Mrs. Peter Knowles
Mrs. Allerton Cushman	Mr. and Mrs. Paul Laurenson
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Dr. and Mrs. B. N. Desenberg	Mr. and Mrs. Martin L. Loftus
Dr. and Mrs. Lowell R. Ditzen	James A. MacDonald Foundation
Mr. and Mrs. Leonard G. Doak	Mr. and Mrs. John P. Mackinnon
Mr. and Mrs. Edward Edgar	Mrs. Frances D. Martyn
Mr. and Mrs. Herbert R. Elsas	Maxon Marine Industries, Inc.
Mr. and Mrs. Ralph W. Farr	Mr. Donald Mayer
First National Bank of Boston	

\$500 or more—continued

Mr. and Mrs. John Mayer	Mr. and Mrs. Eugene Roberts
Mr. D. F. McClathey	Mr. and Mrs. Daniel Rogers
Mr. James R. McCredie	Mr. and Mrs. John L. Rogers
Dr. and Mrs. Leo A. McNalley	Saks Fifth Avenue, Chevy Chase
Mr. and Mrs. Harold W. Metz	Miss Frances Van Schaich
Mr. and Mrs. William J. Milton	Mrs. Alice S. Schwabe
Dr. and Mrs. Charles Morgan	The Schiff Foundation
Mr. and Mrs. James H. Morgan	Seamen's Bank of Savings
Mr. and Mrs. James D. Munro	Mr. and Mrs. H. L. Selinsky
Ogden Marine Inc.	Mr. Sidney N. Shure
Mr. Robert S. Pace	Mr. and Mrs. L. T. Sloane
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Miss Blanche Parseghian	Mr. and Mrs. William D. Snyder
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Miss Caroline S. Reed	Mr. John B. Trevor, Jr.
Mr. and Mrs. John S. Reese	Dr. Herman J. Viola
Mr. and Mrs. Sargent Reynolds	Mr. and Mrs. Albert C. Wall
Miss Esther M. Ridder	The Raymond John Wean Foundation

We also gratefully acknowledge other contributions in excess of \$400,000 received from more than 5,000 contributors in fiscal year 1975.



The 1975 *Smithsonian Catalogue* (foreground) offers a wide variety of Smithsonian Museum Shop merchandise by mail.

PEAT, MARWICK, MITCHELL & CO.

CERTIFIED PUBLIC ACCOUNTANTS
1025 CONNECTICUT AVENUE, N. W.
WASHINGTON, D.C. 20036

The Board of Regents
Smithsonian Institution:

We have examined the balance sheet of the Private Funds of Smithsonian Institution as of June 30, 1975 and the related statement of changes in fund balances for the year then ended. Such statements do not include the accounts of the National Gallery of Art, the John F. Kennedy Center for the Performing Arts, nor other departments, bureaus and operations administered by the Institution under Federal appropriations as detailed in note 2 to the financial statements. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the aforementioned financial statements present fairly the financial position of the Private Funds of Smithsonian Institution at June 30, 1975 and the changes in its fund balances for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

PEAT, MARWICK, MITCHELL & CO.
September 5, 1975

SMITHSONIAN INSTITUTION—PRIVATE FUNDS

Balance Sheet

June 30, 1975

(with comparative figures for 1974)

<i>Assets</i>	1975	1974 (note 1b)
CURRENT FUNDS:		
Cash:		
In U. S. Treasury	\$ 543,741	139,352
In banks and on hand	234,479	651,485
Total cash	<u>778,220</u>	<u>790,837</u>
Investments (note 3)	<u>10,149,875</u>	<u>8,298,318</u>
Receivables:		
Accounts, less allowance for doubtful accounts of \$340,000 (\$200,000 in 1974)	1,882,057	1,247,671
Advances—travel and other	454,775	203,705
Reimbursement—grants and contracts, net	2,271,060	2,261,103
Due from agency funds	<u>246,032</u>	<u>136,151</u>
Total receivables	4,853,924	3,848,630
Inventories	1,118,688	780,054
Prepaid expenses	462,278	420,272
Deferred expenses	1,749,229	1,208,561
Capitalized improvements and equipment, used in income producing activities, net of accumulated depreciation and amortization of \$537,538 (\$409,830 in 1974)	<u>597,610</u>	<u>293,974</u>
Total current funds	<u>\$19,709,824</u>	<u>15,640,646</u>
ENDOWMENT AND SIMILAR FUNDS:		
Cash, net of receivables and payables on securities transactions	41,063	506,035
Notes receivable	48,354	49,966
Due from current funds	316,043	239,967
Investments (note 3)	40,015,177	40,043,593
Loan to U. S. Treasury in perpetuity at 6%	<u>1,000,000</u>	<u>1,000,000</u>
Total endowment and similar funds	<u>\$41,420,637</u>	<u>41,839,561</u>
PLANT FUNDS:		
Due from current funds	461,266	1,626,468
Real estate (note 5)	<u>6,230,034</u>	<u>4,790,921</u>
Total plant funds	<u>\$ 6,691,300</u>	<u>6,417,389</u>
AGENCY FUNDS:		
Investments	10,000	10,000
Due from current funds	<u>386,507</u>	<u>213,100</u>
Total agency funds	<u>\$ 396,507</u>	<u>223,100</u>

See accompanying notes to financial statements.

SMITHSONIAN INSTITUTION—PRIVATE FUNDS

Balance Sheet

June 30, 1975

(with comparative figures for 1974)

<i>Liabilities and Fund Balances</i>	1975	1974 (note 1b)
CURRENT FUNDS:		
Note payable—secured (note 4)	\$ 95,920	191,843
Accounts payable and accrued liabilities	3,261,791	2,596,331
Due to plant funds	461,266	1,626,468
Due to agency funds	386,507	213,100
Due to endowment and similar funds	316,043	239,967
Deferred income:		
Magazine subscriptions	5,215,531	3,645,757
Other	655,955	334,955
Total liabilities	<u>10,393,013</u>	<u>8,848,421</u>
Fund balances:		
Unrestricted:		
General purpose	3,767,375	3,476,776
Special purpose	1,071,155	460,544
Total unrestricted	<u>4,838,530</u>	<u>3,937,320</u>
Restricted	<u>4,478,281</u>	<u>2,854,905</u>
Total fund balances	<u>9,316,811</u>	<u>6,792,225</u>
Total current funds	<u>\$19,709,824</u>	<u>15,640,646</u>
ENDOWMENT AND SIMILAR FUNDS:		
Fund balances:		
Endowment	33,354,530	34,999,970
Quasi-endowment:		
Restricted	2,224,323	2,286,057
Unrestricted	5,841,784	4,553,534
Total quasi-endowment	<u>8,066,107</u>	<u>6,839,591</u>
Total endowment and similar funds	<u>\$41,420,637</u>	<u>41,839,561</u>
PLANT FUNDS:		
Mortgage notes payable (note 5)	269,718	349,617
Accrued liabilities	10,120	36,832
Fund balances:		
Acquisition fund:		
Unrestricted	379,827	625,610
Restricted	71,319	964,026
	451,146	1,589,636
Investment in plant	5,960,316	4,441,304
Total plant funds	<u>\$ 6,691,300</u>	<u>6,417,389</u>
AGENCY FUNDS:		
Due to current funds	246,032	136,151
Deposits held in custody for others	150,475	86,949
Total agency funds	<u>\$ 396,507</u>	<u>223,100</u>

SMITHSONIAN INSTITUTION—PRIVATE FUNDS

Statement of Changes in Fund Balances

Year ended June 30, 1975

	<i>Total current funds</i>	<i>Total unrestricted funds</i>
REVENUE AND OTHER ADDITIONS:		
Auxiliary enterprises revenue	\$18,866,324	18,866,324
Federal grants and contracts	12,344,540	-
Investment income (net of \$91,886 management and custodian fees)	2,396,696	951,143
Gains (losses) on sale of securities	(14,909)	(14,909)
Gifts, bequests, and foundation grants	4,576,523	399,725
Additions to equity in real estate	-	-
Rentals, fees, and commissions	745,708	745,708
Other—net	881,228	244,626
Total revenue and other additions	<u>39,796,110</u>	<u>21,192,617</u>
EXPENDITURES AND OTHER DEDUCTIONS:		
Research and educational expenditures	15,617,194	1,003,767
Administrative expenditures	4,099,594	1,528,091
Auxiliary enterprises expenditures	16,035,738	16,035,738
Expended for real estate and equipment	123,000	-
Retirement of indebtedness	-	-
Interest on indebtedness	-	-
Total expenditures and other deductions	<u>35,875,526</u>	<u>18,567,596</u>
TRANSFERS AMONG FUNDS—ADDITIONS (DEDUCTIONS):		
Mandatory—principal and interest on notes	(96,894)	(96,894)
Portion of investment gain appropriated	295,084	17,078
Income added to endowment principal	(141,677)	-
Appropriated as quasi-endowment	(1,473,436)	(1,463,151)
For designated purposes	-	(180,844)
Endowment released	20,925	-
Net increase in activities	-	-
Total transfers among funds—additions (deductions) ...	<u>(1,395,998)</u>	<u>(1,723,811)</u>
Net increase (decrease) for the year	2,524,586	901,210
Fund balances at June 30, 1974, as restated (note 1b)	6,792,225	3,937,320
Fund balances at June 30, 1975	<u>\$ 9,316,811</u>	<u>4,838,530</u>

See accompanying notes to financial statements.

Current funds

Unrestricted

General purpose	Activities	Special purpose	Restricted	Endowment and similar funds	Plant funds	
					Acquisition	Investment in plant
-	18,655,293	211,031	-	-	-	-
-	-	-	12,344,540	-	-	-
948,318	-	2,825	1,445,553	-	-	-
(14,909)	-	-	-	(1,718,330)	-	-
45,625	146,929	207,171	4,176,798	302	76,443	-
-	-	-	-	-	-	1,519,012
617,851	-	127,857	-	-	-	-
42,846	-	201,780	636,602	-	110,696	-
<u>1,639,731</u>	<u>18,802,222</u>	<u>750,664</u>	<u>18,603,493</u>	<u>(1,718,028)</u>	<u>187,139</u>	<u>1,519,012</u>
679,405	-	324,362	14,613,427	-	-	-
888,878	620,700	18,513	2,571,503	-	-	-
-	15,873,713	162,025	-	-	-	-
-	-	-	123,000	-	1,316,112	-
-	-	-	-	-	79,899	-
-	-	-	-	-	26,512	-
<u>1,568,283</u>	<u>16,494,413</u>	<u>504,900</u>	<u>17,307,930</u>	<u>-</u>	<u>1,422,523</u>	<u>-</u>
(96,894)	-	-	-	-	96,894	-
17,078	-	-	278,006	(295,084)	-	-
-	-	-	(141,677)	141,677	-	-
(1,463,151)	-	-	(10,285)	1,473,436	-	-
(326,604)	(219,087)	364,847	180,844	-	-	-
-	-	-	20,925	(20,925)	-	-
2,088,722	(2,088,722)	-	-	-	-	-
<u>219,151</u>	<u>(2,307,809)</u>	<u>364,847</u>	<u>327,813</u>	<u>1,299,104</u>	<u>96,894</u>	<u>-</u>
290,599	-	610,611	1,623,376	(418,924)	(1,138,490)	1,519,012
3,476,776	-	460,544	2,854,905	41,839,561	1,589,636	4,441,304
<u>3,767,375</u>	<u>-</u>	<u>1,071,155</u>	<u>4,478,281</u>	<u>41,420,637</u>	<u>451,146</u>	<u>5,960,316</u>



Newly renovated Museum Shop in the National Museum of History and Technology opened to the public in March 1975.

SMITHSONIAN INSTITUTION—PRIVATE FUNDS

Notes to Financial Statements

June 30, 1975

1. *Summary of Significant Accounting Policies*

- a. **Accrual Basis**—The financial statements of Smithsonian Institution—Private Funds (note 2) have been prepared on the accrual basis, except for depreciation of plant fund assets as explained in note 1(h) below, and are in conformity with generally accepted accounting principles included in the American Institute of Certified Public Accountants Audit Guide "Audits of Colleges and Universities."
- b. **Current funds** include capitalized improvements and equipment used in income producing activities having a net carrying value of \$597,610 and \$293,974 at June 30, 1975 and 1974, respectively. Such assets together with funds held for additions and liabilities on acquisitions, which were previously included in plant funds, were reclassified to current unrestricted funds at the beginning of the 1975 year to better reflect assets and liabilities used in current operations. Figures for 1974 have been reclassified in the accompanying balance sheet at June 30, 1974 to put them on a comparable basis with 1975, resulting in an increase in the current unrestricted fund balance and a decrease in the plant funds balance of \$410,182 at June 30, 1974.

Current funds used to finance the acquisition of plant assets and for provisions for debt amortization and interest are accounted for as transfers to the plant fund.

- c. **Fund Accounting**—In order to ensure observance of limitations and restrictions placed on the use of the resources available to the Institution, the accounts of the Institution are maintained in accordance with the principles of "fund accounting." This is the procedure by which resources for various purposes are classified for accounting and reporting purposes into funds that are in accordance with activities or objectives specified. Separate accounts are maintained for each fund; however, in the accompanying financial statements, funds that have similar characteristics have been combined into fund groups. Accordingly, all financial transactions have been recorded and reported by fund group.

Within each fund group, fund balances restricted by outside sources are so indicated and are distinguished from unrestricted funds allocated to specific purposes by action of the governing board. Externally restricted funds may only be utilized in accordance with the purposes established by the source of such funds and are in contrast with unrestricted funds over which the governing board retains full control to use in achieving any of its institutional purposes.

Endowment funds are subject to the restrictions of gift instruments requiring in perpetuity that the principal be invested and the income only be utilized. Also classified as endowment funds are gifts which will allow the expenditure of principal but only under certain specified conditions.

While quasi-endowment funds have been established by the governing board for the same purposes as endowment funds, any portion of such funds may be expended. Restricted quasi-endowment funds represent gifts for restricted purposes where there is no stipulation that the principal be maintained in perpetuity or for a period of time, but the governing board has elected to invest the principal and expend only the income for the purpose stipulated by the donor.

All gains and losses arising from the sale, collection, or other disposition of investments and other noncash assets are accounted for in the fund which owned such assets. Ordinary income derived from investments, receivables, and the like, is accounted for in the fund owning such assets, except for income derived from investments of endowment and similar funds, which income is accounted for in the fund to which it is restricted or, if unrestricted, as revenues in unrestricted current funds.

All other unrestricted revenue is accounted for in the unrestricted current fund. Restricted gifts, grants, endowment income, and other restricted resources are accounted for in the appropriate restricted funds.

- d. Investments are recorded at cost or fair market value at date of acquisition when acquired by gift.
- e. Inventories are carried at lower of average cost or net realizable value.
- f. Income and expenses in respect to the Institution's magazine and associates' activities are deferred and taken into income and expense over the applicable periods and are reported in the activities section of the current unrestricted funds.
- g. The Institution utilizes the "total return" approach to investment management of endowment funds and quasi-endowment funds. Under this approach, the total investment return is considered to include realized and unrealized gains and losses in addition to interest and dividends. In applying this approach, it is the Institution's policy to provide 4½% of the five year average of the market value of each fund (adjusted for gifts and transfers during this period) as being available for current expenditures; however, where the market value of the assets of any endowment fund is less than 110% of the historic dollar value (value of gifts at date of donation) the amount provided is limited to only interest and dividends received.
- h. Capitalized improvements and equipment used in income-producing activities purchased with Private Funds are capitalized in the current unrestricted fund at cost (see note 1(b)), and are depreciated on a straight-line basis over their estimated useful lives of five to ten years. Depreciation expense of \$130,525 for 1975 is reflected in the expenditures of the current funds.

Real estate (land and buildings) are recorded in the plant fund at cost, to the extent that restricted or unrestricted funds were expended therefor, or appraised value at date of gift, except for gifts of certain islands in

Chesapeake Bay, Carnegie Mansion, and Hillwood Estate which have been recorded at nominal values. Depreciation on buildings is not recorded.

All the other land, buildings, fixtures and equipment (principally acquired with Federal funds), works of art, living or other specimens are not reflected in the accompanying financial statements.

- i. The agency funds group consists of funds held by the Institution as custodian or fiscal agent for others.
- j. Pension Costs—All pension costs are funded as accrued.
- k. The Institution has a number of contracts with the U. S. Government, which primarily provide for cost reimbursement without fee to the Institution. Contract revenues are recognized as expenditures are incurred.

2. *Related Activities*

The Private Funds reflect the receipt and expenditure of funds obtained from private sources, from Federal grants and contracts and from certain business activities related to the operation of the Institution.

Federal appropriations, which are not reflected in the accompanying financial statements, provide major support for the operations and administration of the educational and research programs of the Institution's many museums, art galleries and other bureaus, as well as for the maintenance and construction of related buildings and facilities. In addition, land, buildings and other assets acquired with Federal funds are not reflected in the accompanying financial statements.

The following Federal appropriations were received by the Institution for the fiscal years ended June 30, 1975 and 1974:

	<u>1975</u>	<u>1974</u>
Operating funds	\$72,511,000	60,562,900
Special foreign currency program	2,000,000	4,500,000
Construction funds	17,910,000	21,860,000
	<u>\$92,421,000</u>	<u>86,922,900</u>

3. *Investments*

Quoted market values and carrying values of investments (all marketable securities) of the funds indicated were as follows:

	<u>June 30, 1975</u>		<u>June 30, 1974</u>	
	<i>Carrying value</i>	<i>Market value</i>	<i>Carrying value</i>	<i>Market value</i>
Current funds	\$10,149,875	10,083,444	8,298,318	7,971,088
Endowment and similar funds	40,015,177	40,532,249	40,043,593	34,822,438
Total investments ..	<u>\$50,165,052</u>	<u>50,615,693</u>	<u>48,341,911</u>	<u>42,793,526</u>

Total investment performance is summarized below:

	Net gains (losses)		
	Current funds	Endowment and similar funds	Total
Unrealized gains (losses):			
June 30, 1975	\$ (66,431)	517,072	450,641
June 30, 1974	(327,230)	(5,221,155)	(5,548,385)
Unrealized net gains for year	260,799	5,738,227	5,999,026
Realized net losses for year	(14,909)	(1,718,330)	(1,733,239)
Total net gains for year	\$ 245,890	4,019,897	4,265,787

Substantially all of the investments of the endowment and similar funds are pooled on a market value basis (consolidated fund) with each individual fund subscribing to or disposing of units on the basis of the value per unit at market value at the beginning of the calendar quarter within which the transaction takes place. Of the total units each having a market value of \$102.61 (\$84.60 in 1974), 333,155 units were owned by endowment, and 62,239 units by quasi-endowment at June 30, 1975.

The following tabulation summarizes the changes in the pooled investments during the year ended June 30, 1975:

	Carrying value	Market	Market value per unit
June 30, 1975	\$40,063,092	40,569,918	102.61
June 30, 1974	11,845,384	10,195,872	84.60
Increase	\$28,217,708	30,374,046	18.01

The increase in pooled investments during the year ended June 30, 1975 resulted primarily from the addition of certain endowment funds to the pooled investments.

4. Note Payable

The note payable in the principal amount of \$95,920 (\$191,843 in 1974), which is noninterest bearing, is secured by computer equipment and is payable in monthly installments of \$7,993 to June 30, 1976.

5. Mortgage Notes Payable

The mortgage notes payable are secured by first deeds of trust on property acquired in connection with the Chesapeake Bay Center. The details of the mortgage notes payable are as follows:

	1975	1974
Mortgage note, payable in semiannual installments of \$13,300, plus interest at the prevailing prime rate at the due date of the installment payment but not less than 8%, due July 1, 1980	\$146,300	172,900
6% mortgage note payable, due in monthly installments of \$451 including interest, due November 1, 1989	33,418	36,717

6% mortgage note, payable in semiannual install- ments of \$10,000, plus interest, due November 7, 1979	90,000	110,000
7% mortgage note, payable in annual installments of \$30,000, plus interest, due November 1, 1974	—	30,000
	<u>\$269,718</u>	<u>349,617</u>

6. *Pension Plan*

The Institution has a contributory pension plan providing for the purchase of retirement annuity contracts for those employees meeting certain age and length of service requirements who elect to be covered under the plan. Under terms of the plan, the Institution contributes the amount necessary to bring the total contribution to 12% of the participants' compensation subject to social security taxes and to 17% of the participants' compensation in excess of that amount. The total pension expense for the year was \$815,304 (\$729,068 in 1974).

7. *Management Fees*

The Institution provides financial and management services to certain affiliated organizations. In 1975 the Institution charged fees for such services as follows:

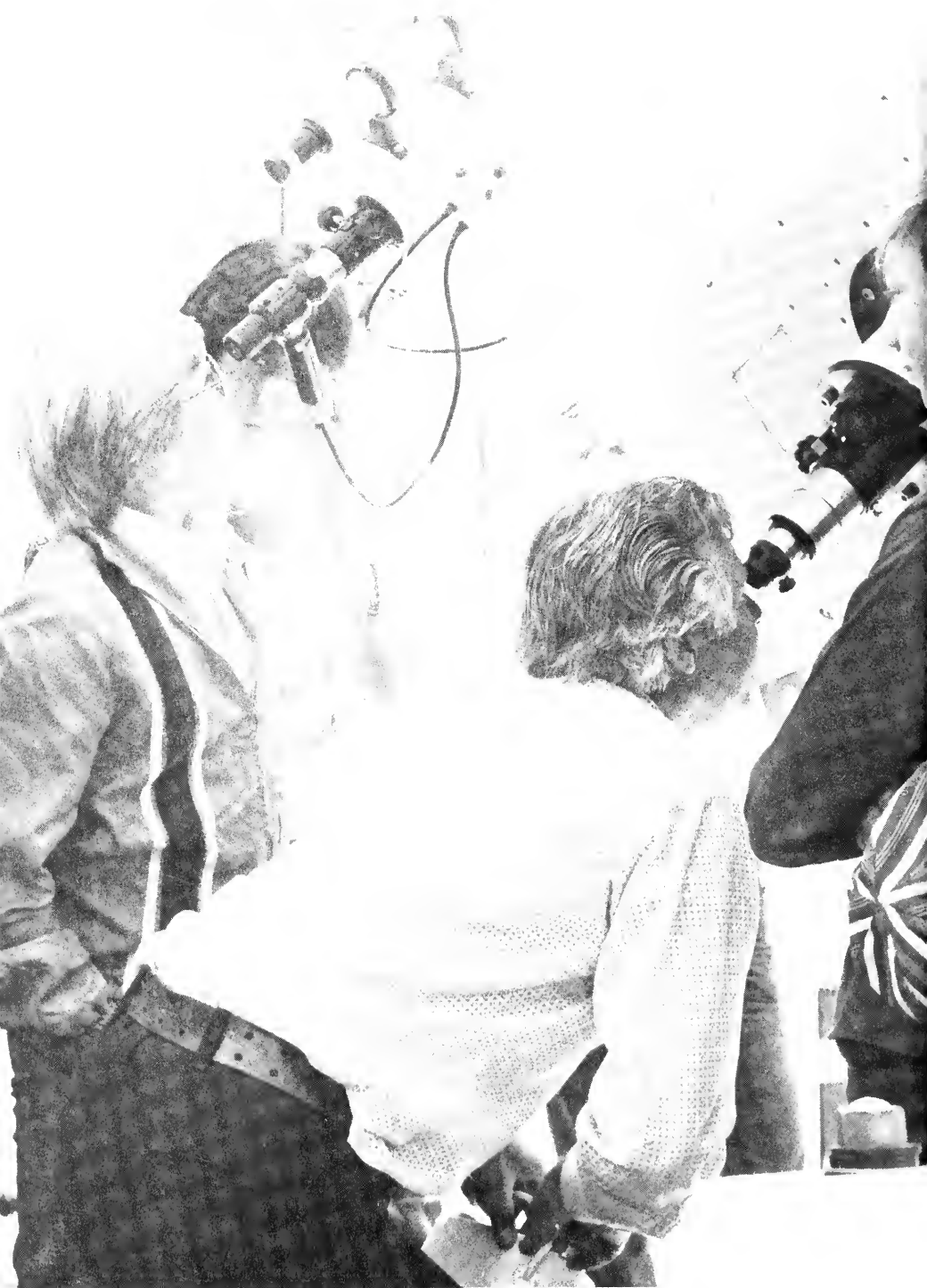
Smithsonian Research Foundation	\$125,000
Smithsonian Science Information Exchange	130,000
Reading Is Fundamental, Inc.	38,000
Center for Natural Areas	24,000
	<u>217,000</u>

8. *Income Taxes*

The Institution has been recognized as exempt from income taxes as a nonprofit organization described in Section 501(c)(3) of the Internal Revenue Code. It is the opinion of the Institution that it is also exempt from taxation as an instrumentality of the United States as described in Section 501(c)(1) of the Code. Formal recognition of this dual status will be sought from the Internal Revenue Service. Should the Institution's position not prevail, income taxes might be imposed on certain income of the Institution, under provision of the Internal Revenue Code dealing with unrelated business income as defined therein.

9. *Commitments*

The Institution has entered into a contract for construction of a West Court facility within the National Museum of Natural History at a total estimated cost of \$3,000,000 which is to be financed by a \$1,100,000 construction loan with the remainder being financed from the unrestricted general fund balance.



Visitors to the annual Mount Hopkins Observatory Open Day take a daytime look at the planet Venus through one of the many telescopes at the mountain-top facility. Photo: Smithsonian Astrophysical Observatory.

SCIENCE

DAVID CHALLINOR, ASSISTANT SECRETARY

THE QUALITY OF SCIENCE at the Smithsonian and its diversity were closely examined this past year. Some new ways were used to assess the progress and promise of science at the Institution—most notably a seminar held at Front Royal in February.

At the Front Royal Seminar scientists from each of the bureaus had an opportunity to describe their research to each other and to discuss the future direction of science in general. This gathering enabled the assembled researchers to learn about the work being undertaken in the various bureaus and to consider the relationship which that work might have to their own endeavors. A number of recommendations made at this meeting addressed concerns already on the minds of administrators while other recommendations pointed to potential areas of investigation.

Maintenance and improvement of the quality of research were pinpointed as the major priority of Smithsonian science by those present. The maintenance of the highest standards of research coupled with increased resources is the desired goal. It was clear from the remarks of the participants that size is a major concern to all, and the uppermost question was how or to what degree can or should growth be limited. The Smithsonian's current size allows flexibility and the concomitant ability to respond quickly. This characteristic reflects the unique quality of our Institution's operation and is one that separates us from many of the federally funded research institutions. Freedom from the ephemeral nature of efforts to overcome specialization and its trappings sets us apart from most universities. This approach allowed us to convene the seminar at

Front Royal in the form of an interdisciplinary dialogue, an achievement which would not have been possible in a bureaucratic environment.

Once again the threat of nascent anti-intellectualism appeared this year with challenges to the type of basic research which the Smithsonian performs or sponsors. While this kind of basic research will always be subject to ridicule because of esoteric titles, the scientist-administrators must continue to defend and promote basic research as perhaps the most important part of their job.

When quantum leaps are made in the space sciences or medicine, no one pauses to realize that these advances have come about only through years of unspectacular basic research. The Smithsonian is unique in the federal structure for its concentration on basic research, indeed it is one of our most fundamental premises. The knowledge and information gained from such work has furnished the base from which the mission agencies produce practical results.

We shall continue to seek preeminence in our research areas by better utilizing our resources, by retaining the process of peer review, and by exploiting our unique flexibility to respond to the significant challenges of the future, while always maintaining our existing strengths.

Center for the Study of Man

The Center for the Study of Man has continued research activities in the human sciences throughout fiscal year 1975. Following its successful conferences at the International Congress of Anthropological and Ethnological Sciences in 1973, the Center administered and edited the publications which resulted from those meetings. Forthcoming and in press are the following:

1. Volumes in the World Anthropology Series, published by Mouton. *The Anthropological Study of Education*, edited by Craig J. Calhoun; *Toward a General Theory of Education*, edited by Frederick Gearing and Lucinda Sangree; *Population and Social Organization*, edited by Moni Nag; *Population, Ecology and Social Evolution*, edited by Steven Polgar; *Cross-Cultural Perspectives on Cannabis*, edited by Vera Rubin; *Cross-Cultural Approaches to the Study of Alcohol*, edited by J. Waddell, M. Everett, and D. Heath.

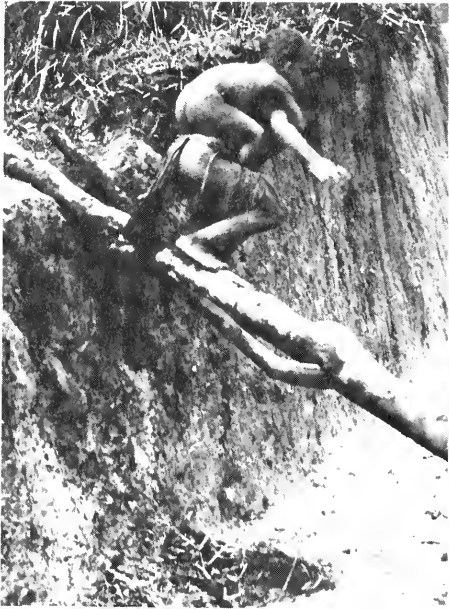
2. Conference Reports: *The Cultural Consequences of Population Change*, report on a Seminar held in Bucharest, Romania, August 14-17, 1974. (Edited by the Center, includes edited versions of papers prepared for the Seminar.)

From August 14 to August 17, 1974, the Center, in conjunction with the Romanian Academy of Sciences and the Population Commission of the International Congress of Anthropological and Ethnological Sciences, hosted a meeting on the cultural implications of population change at Bucharest, Romania. The meetings were held prior to and in conjunction with the World Population Conference. In addition to the sixteen third world persons representing the Philippines, Indonesia, Bangladesh, India, Sri Lanka, Nigeria, Kenya, Ghana, Mexico, and Venezuela, there were Margaret Mead, Sol Tax, Steve Polgar, and Moni Nag from the United States, and Sam Stanley and William Douglass representing the Smithsonian Institution.

The meetings accomplished a number of related objectives. Representatives from third world countries had an excellent opportunity to exchange views about the present condition of the human sciences with nonthird world colleagues. The members of the Seminar had an opportunity to review each other's papers and also the documents put out by the World Conference on Population of the United Nations, 1974. Most importantly, they were able to advance their own views on the draft World Plan of Action for the World Population Year. As a result there was specific input from the Seminar to the World Plan of Action. They pointed out that the document ought to recognize that all humans are members of social groups which are smaller than nations. They also urged the United Nations to begin to develop a global ethic on population with which any nation-state may evaluate its own performance.

The Urgent Anthropology Small Grants Program continued to function during the fiscal year. Grants were made for urgent research in North America and Africa.

During the past fiscal year the Center began research on surviving American Indian groups in the Eastern and Southern parts of the United States. This modest program has yielded some interesting results. From preliminary investigation it would appear that more Indian groups have survived than previously estimated, though much additional work remains to be done.



From the Study of Child Behavior and Human Development in Cultural Isolates of the National Anthropological Film Center, visual data on typical child-handling practices has been abstracted for a number of studies: Among the Fore people of New Guinea, infants and toddlers must take some of the responsibility for remaining safely on the backs of those carrying them. Although the carrier often holds the hands of a carried infant and sometimes shuffles a sagging child back to a more secure position, the responsibility for staying on falls to a significant degree to the infant, who must manage for himself while his carrier negotiates difficult trails or darts and cavorts in play. *Facing page*: in contrast, Cora Indian infants and toddlers can remain relaxed and passive tied to the backs of their older siblings.

Another part of the American Indian Program is concerned with learning more about the transition period between what is gathered from ethnology and from archeology. This work is also valuable for the forthcoming encyclopedic *Handbook of North American Indians*. It is anticipated that several volumes of the Handbook, under the general editorship of William C. Sturtevant, will begin appearing in 1976.



RESEARCH INSTITUTE ON IMMIGRATION AND ETHNIC STUDIES

The work of the Research Institute on Immigration and Ethnic Studies for the fiscal year 1975 involved a wide-range of activities: special lectures and participation in professional meetings on ethnicity and immigration; publications in professional journals; supervision of graduate fellows in ethnic studies; and rendering consultation services to other sectors of the Smithsonian Institution. Under the directorship of Roy S. Bryce-Laporte, a comparative sociologist, RIIES obtained internal support for a bicentennial project on new immigration to the United States. The project being coordinated by Ms. Dolores Mortimer takes the form of a series of seminars on various aspects of the new immigration which will culminate in a national conference and publication. Various consultation visits and advisory seminars in Washington, D.C., California, Florida, and the Virgin Islands, have been carried out by RIIES staff and it has contracted for data surveys on special immigrant populations. Lecture presentations by the Director of RIIES were made at Howard University, the Caribbean Studies Association, and the International Studies Association.

THE NATIONAL ANTHROPOLOGICAL FILM CENTER

The National Anthropological Film Center was established this year to take fuller advantage of the scholarly potential of film as a tool of inquiry into the vanishing and changing ways of life and cultures of the world. Like its parent discipline, anthropology, the Center will bridge both science and the humanities, dealing with the full range of the human condition. Strictly scientific studies will be balanced by more humanistic interests dealing with the arts, historical process, and cultural values.

Physically, the Center will serve as a research facility and repository for visual studies in much the way that museums obtain and preserve important objects and materials for continued study and to support findings. The Center will also provide cultural information to peoples who have little written history, thereby helping fulfill their need for information related to their own development.

Projects have been started which involve filming a number of cultural survivals. The Center is giving special attention to the few remaining small, isolated cultural groups of the world which have evolved independently over thousands of years, and to other small social enclaves which represent vanishing unique expressions of human organization and behavior. It also collaborates with documentary film projects sampling the range of better known, more stable cultural variation, including traditional folk cultures, as well as selected aspects of our changing modern society.

Presently being planned is a research film library in which film prints will permit review, study, and scholarly assembly, leaving original films undamaged to take advantage of future advances in the copying technology. The basic collection is being developed so that access will ultimately be possible via cable connecting a central automated videotape library with study centers and museum displays.

The Center has been able to develop collaborative projects with scholars in various parts of the world; and it has been able in a few crucial areas to provide raw film stock, film processing, equipment, and guidelines to anthropologist-filmmakers interested in preparing scholarly visual documents as a permanent research resource. Experimental field studies are also underway in an effort to develop and improve visual sampling methods and equipment.



Affectionate play among children of different ages is characteristic among the Fore of New Guinea. Knives or other potentially dangerous objects are also part of the play environment experienced by young children. One of the findings coming from the Study of Child Behavior and Human Development in Cultural Isolates is that such aspects of child handling have a direct influence on the behavior patterns developed as children grow older.

With Mr. John Marshall, world-famous anthropological filmer of the Kalahari Bushmen, the Center has begun assembling and annotating his film record, the most extensive ever made of a traditional hunting-gathering society, and preparing research films for deposit in the National Anthropological Film Center.

Although facilities to store film have not yet been completed, the Center has begun its search for existing anthropological film footage of research value which may be in danger of deterioration or loss. Film historian Emilie de Brigard has agreed to join the staff

for a short period to apply her extensive knowledge of work already done in anthropological film.

With the cooperation of Dr. Norman Miller, Director of the American Universities Field Staff Film Project, the Center has now accessioned 126,800 feet of research filmed material of human adaptation in three modernizing cultures: a Tadjik-Pashtoon-Uzbek agricultural village in northern Afghanistan, a highlands Aymara subsistence agricultural community in Bolivia, and a cattle-herding Boran nomadic group in Kenya. The Afghanistan footage has already been annotated by anthropologist Dr. Louis Dupree. The others are now being prepared for annotation. The Center celebrated its formal opening with premier showings of several educational films prepared by the American Universities Field Staff from this research filmed material.

With anthropological filmmakers Asen Balikci of the University of Montreal and Timothy Asch of Harvard University, and the collaboration of Professor Bayazid Atsak of Kabul University, the Center has begun a research film study of the Pashtoon Nomads of Afghanistan, whose way of life is now rapidly disappearing.

At the invitation of the Premier of the Cook Islands, Sir Albert Henry, and with a grant obtained from the National Geographic Society, the Center is preparing to document representative traditional dances from each of the three major Polynesian culture areas comprised by the Cook Islands.

As part of the Study of Child Behavior and Human Development in Cultural Isolates and with the support of the Instituto Nacional Indigenista of Mexico, the Center is proceeding with a long-term film study of traditional Huichol Indian life in the San Andres region of Mexico. Dr. Kalman Muller, an anthropological filmmaker now resident in this region, has been participating as chief ethnocinematographer.

With Dr. William Crocker of the Department of Anthropology, the Center is collaborating in a research film study of child behavior and human development among the relatively unacculturated Canela Indians of Brazil.

In collaboration with Dr. Kalman Muller, the research film study of remaining surviving traditional Melanesian cultural groups in the New Hebrides Islands is continuing. This footage is now being prepared as annotated research films at the Center.



Research film studies of naturally occurring human behavior in different parts of the world not only make possible comparative studies of play and child interaction but also of such culturally variable characteristics as gait.

In an effort to devise methods by which film footage shot by educational filmmakers may also be prepared as a research resource, the Center is exploring a variety of strategies with filmmakers from the American Universities Field Staff, the University of Montreal, Harvard University, the University of Illinois, Bellevue Community College, the University of California, Indiana University, the University of Pennsylvania, Delhi University (India), and the Anthropology Film Center (Santa Fe).

Chesapeake Bay Center for Environmental Studies

In January 1975, Dr. Francis S. L. Williamson, after six years as Director of the Chesapeake Bay Center for Environmental Studies, resigned to accept an appointment as Commissioner of Health and Social Service for the state of Alaska. Dr. J. Kevin Sullivan assumed the position of Acting Director.

Dr. Williamson and his colleagues conceived of the Rhode River Program, which is the core of the Center's research effort. This project is a study of the interaction of the Rhode River estuary with its watershed and man's impact on this system. The completion during fiscal year 1975 of a full year of monitoring material entering the estuary from land runoff and other non-point sources and the initiation of a Forest Ecology Program are steps toward understanding how man's use of land affects this ecosystem. The Forest Ecology Program is part of the Smithsonian's Environmental Sciences Program (ESP).

The watershed of the Rhode River is composed of many small basins, some of which drain into discrete creeks. As part of the non-point sources study, the Center constructed instrumented weirs (notched dams) to monitor the runoff from eight of these basins. The weirs record the volume of water discharged while taking volume-integrated samples. These samples are analyzed for sediment and nutrient concentrations.

Each drainage basin contains a different proportion of five land-use types: cultivated cropland; wet areas such as ponds, swamps, and marshes; pasturelands; natural areas such as forest and brushland; and residential areas including dwellings and roads. The total area being monitored is 2100 acres.

Data gathered have been used to determine mathematically the area loading rates to the Rhode River from each of the five land-use categories at different times of the year. These rates are applicable to predicting the effects of land-use changes upon the turbidity and nutrient loading of an estuary on a seasonal basis.

Stream samples were also taken at times of known water discharge and analyzed for total and fecal coliform bacteria as indicators of pollution with human pathogens. Analyses revealed high correlations between fecal coliform levels and water runoff rates for each watershed. At times of heavy runoff, contamination of the

Rhode River estuary with bacteria of fecal origin was a serious problem. As the volume of the Rhode River increased toward the mouth, fecal coliform bacteria were diluted and the higher salinity levels further contributed to their decline in numbers.

The non-point sources study is funded by NSF-RANN (National Science Foundation-Research Applied to National Needs) through the Chesapeake Research Consortium. It is the most extensive study of its kind currently underway on an estuarine system in the United States. Investigators from the University of Maryland and the Johns Hopkins University are working with Smithsonian scientists on this project. Dr. David Correll is coordinating the Rhode River Research Program.

In addition to the land runoff studies, scientists at CBCES participated in the development of a Forest Ecology Program. This Program has as its objective the monitoring of species succession among primary producers at sites which have been subjected to various land uses. Studies of small mammals, birds, insects, soils, and minerals are coordinated with the studies of vegetational succession.

Eight forest ecology study sites have been identified in the Java Farm area. They include sites which have been undisturbed for several hundreds of years (Hog Island) and others intensively cultivated until abandonment in the 1940s. A wide disparity exists between plant communities at these sites, even in those which have had the same land use. CBCES scientists hope to determine the factors controlling species succession in the forest community. Baseline data collected in this study will also be used to predict the impact of man's perturbations on the forest ecosystem.

EDUCATION

With the addition of a full-time Program Director this past year, education activities were restructured and several new starts were made. A large-scale model field trip program in outdoor education at the CBCES was initiated. These teacher-led experimental tours, which occur daily during the spring and fall, are designed to satisfy specific curriculum requirements in science education in Anne Arundel and other nearby counties.

Efforts were also made to develop a model Outdoor Environmental Education Program for Adults. The CBCES played an active

Facing page, above: In order to measure land runoff and other non-point sources of pollution, CWCES investigators have instrumented the Rhode River watershed's key tributary streams with a system of wiers—notched dams that permit water to flow through. The wiers record volume and velocity of flow while automatically collecting samples at intervals determined by flow rates. The samples are collected weekly and analyzed for nitrogen, phosphorus, particulate load, total and fecal bacteria and pathogens.

Facing page, below: With the aid of sweepnets and plastic bags, students are exploring the variety of insects and spiders that live in a forest community. This field activity was developed by Dr. John Falk, CWCES Education Director, as part of the OBIS (Outdoor Biology Instructional Strategies) Program. It is one of many OBIS activities which are designed to promote the understanding of ecological relationships by youngsters from eleven to fifteen years of age.

Below: A major new facility—the Jean C. Schmidt Environmental Education Building—was completed at the Chesapeake Bay Center for Environmental Studies in March 1975. This building is divided into two sections: a visitors' area which contains an auditorium seating 200 people and a dormitory area which houses twelve and includes a kitchen, a study room, and a lounge. The visitors' area will serve as a center for workshops on environmental education, for meetings of citizen groups, and for conferences on environmental research. The dormitory will be quarters for college students on work/study projects and visiting scientists.





leadership role in the formation of a coalition for Adult Environmental Education in cooperation with the National Park Service and the National Audubon Society and several adult groups participated in trial programs during the fall and spring.

The CBCES was the recipient of a National Science Foundation (NSF) grant designed to implement OBIS (Outdoor Biology Instructional Strategies) within out-of-school community institutions. In addition, CBCES was designed as an OBIS National Field Center.

OBIS is an outdoor biology program that gives young people between the ages of eleven and fifteen years the experience of observing and investigating organisms and events in the outdoors. Under the NSF grant, the Center is conducting instructional workshops on OBIS activities for elementary and junior high school teachers, summer day camp directors, and high school students.

For the second year, a Summer Ecology Program for children in grades three through twelve was operated at CBCES. The objective of this program is to train college students in outdoor education techniques and is aimed at future elementary and secondary school teachers. In addition, the Center continued its successful Speakers Bureau Program in which Center staff present talks on environmental subjects to a variety of local and regional groups.

INFORMATION TRANSFER

Funded with a grant from the Edward John Noble Foundation, the Information Transfer Program has as its goal the translation of scientific results into forms which can be used by planners, government officials, and resource managers who make decisions which affect the Bay. In addition, the program makes environmental information available to organizations and individuals.

Projects undertaken this year include a study on the opportunities for citizen participation in the water quality planning process. An information specialist identified and evaluated these major areas for citizen participation in the state of Maryland: Public Advisory Councils on river basin planning, public informational meetings and hearings on basin plans, and hearings on discharge permits and the state's Priority List for construction of sewage treatment plants. The study resulted in recommendations for improving citizen participation in the planning process and many of the recommendations were adopted.

Over the past year, the Center greatly expanded its informational services to management agencies, citizen organizations, and the general public. News releases summarizing on-going research activities at CBCES were distributed to resource managers, environmental leaders, and other interested groups and individuals. CBCES staff also developed information on specific environmental issues such as land use, solid waste disposal, and off-shore energy technology for citizen groups and government officials.

The Center provided support in the form of staff time and expertise to a number of local citizen organizations. Support activities for these groups included organizing workshops and conferences, researching environmental issues and planning public programs.

CBCES helped organize two workshops on Maryland's Coastal Zone Management Program (CZMP). The first workshop focused on major environmental problems affecting Maryland's coastal zone; the second explored citizen participation alternatives in Maryland's CZMP.

FACILITIES

The Jean C. Schmidt Environmental Education Building was completed in March 1975. The brick building is divided into two sections. The visitor area contains an auditorium seating 200 people. Movable storage dividers convert it into smaller rooms. This area will be used for meetings and workshops and as a reception center for visiting groups and individuals.

The dormitory area houses twelve and includes a kitchen, a study room, and a lounge. It will be quarters for college students on work/study projects and visiting scientists.

STAFF

The Center's full-time staff numbered approximately forty-five at the close of the fiscal year. Over one-half of these employees are private employees. Additions to the permanent federal staff included Dr. James Lynch, zoologist, and Mr. Gary Chirlen, biological systems analyst.

Some thirty additional researchers are actively engaged in projects at the Chesapeake Bay Center, including principal investigators for the Rhode River Research Program from the Johns Hopkins University, the University of Maryland, and the United States Geological Survey.



Aerial view of Link Port, location of the Smithsonian's Fort Pierce Bureau in Florida.

Fort Pierce Bureau

The scientific objectives of the Smithsonian Institution's Fort Pierce Bureau for the next five to ten years was approved on a year-to-year basis in a Resolution by the Board of Regents during its meeting in May. The Fort Pierce Bureau has three long-range and interrelated programs which are designed to understand the estuarine and marine environments along the east coast of Florida and adjacent continental shelf and to establish baseline information for measuring natural and man-caused stresses and changes. These are the Indian River Study, Life Histories Studies, and Submarine Exploration of the East Florida Continental Shelf.

The Indian River Study is a ten-year joint program with the Harbor Branch Foundation, Inc., to obtain baseline information on the biota in the Indian River lagoon, environmental quality and sources of pollution, and a predictive capability of natural and man-induced changes. Quantitative benthic sampling at seagrass (*Halodule wrightii*) stations has resulted in almost 50,000 specimens, which will provide information on community structure. Effects of predation on the seagrass-associated benthos have been studied by using field enclosures (cages). A checklist of over 500 fishes from the Indian River region has been completed, based on 100 continental-shelf trawling stations and 1000 estuarine seine collections, along with a literature survey. Fifteen percent of the fishes sampled have not been recorded previously. Twelve cruises of the houseboat research laboratory have measured chemical parameters of the water column along the estuary for fluctuations of major nutrients, heavy metals, phytoplankton composition, and standing crop. Indian River Study data from 1383 biological stations, 521 chemical stations, and 75 physical oceanographic stations have been stored in the Smithsonian's SELGEM data management system in Washington, D.C., from the remote computer terminal on the laboratory barge at Fort Pierce.

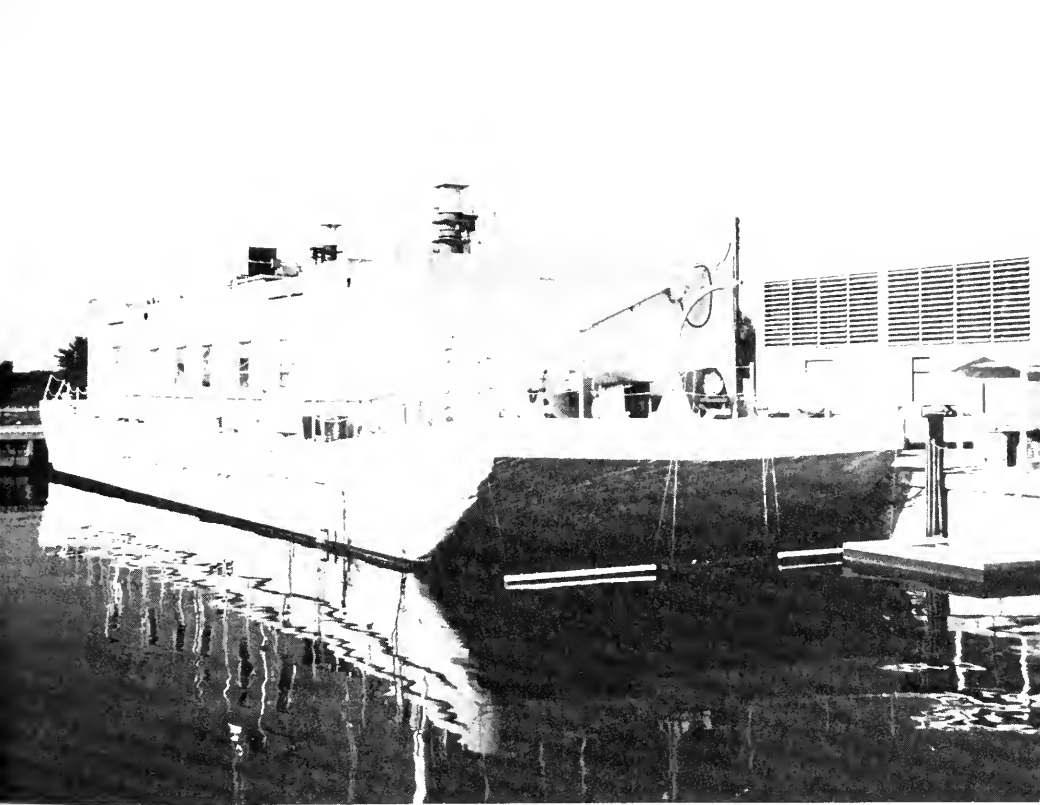
Objectives of the Life Histories Studies are to obtain baseline information on reproduction, developmental patterns, and larval development of common marine organisms in the Indian River and offshore oceanic waters in the vicinity of Fort Pierce. The knowledge of these critical phases of development, essential to survival and dispersal of species, is to be utilized as part of the consortium effort

in the understanding of marine ecosystems and the assessment of environmental stresses. During the past year studies have concentrated on two groups of benthic invertebrates, which form prominent communities in the Fort Pierce area, sipunculans and sabellariids. Twenty-four sipunculans have been collected in the Indian River and adjacent continental shelf, five of which appear to be previously undescribed species. Observations have been made on the spawning and breeding seasons of nine species of sipunculans, including the unusual self-fertilizing hermaphrodite, *Themiste lageniformis*, which occurs in densities as great as 500 per square meter in the Fort Pierce Inlet. Developmental patterns of local species vary from direct development with no larval stage, through those with short-lived swimming larval stages to sipunculans with long-lived planktonic larval stages. Electron microscopy of larval cuticle has revealed distinguishing patterns of structure which can serve to identify planktonic larvae to species. An investigation is also underway on the role of various substrates in inducing metamorphosis of sipunculan larvae.

The Submarine Exploration of the East Florida Continental Shelf is intended to build an inventory bank of continental-shelf organisms correlated with environmental and ecological information with a precision heretofore unavailable by conventional sampling methods. It is being carried out by the Harbor Branch Foundation.

National Air and Space Museum

The grand event of fiscal year 1975 for the National Air and Space Museum was the move of the staff from the Arts and Industries Building to the new museum on Independence Avenue, between Fourth and Seventh Streets. Construction of the building is complete, and it has been transferred from the General Services Administration to the Smithsonian. The first aircraft, the Douglas World Cruiser "Chicago" was moved into the museum in April. The task is now to fill the museum with educational and interesting exhibits and artifacts. This assignment, though formidable, will be possible as a result of a successful Arts and Industries Building exhibits trial program, which marked the beginning of a most ambitious design and fabrication program. The program, to provide approximately



Smithsonian's floating laboratory barge which currently is the headquarters for the Indian River study. *Below:* A portion of the Indian River study reference collections on the floating laboratory barge which now houses about 1000 lots of fishes, 2400 lots of decapods, and 1000 lots of other miscellaneous invertebrates.



200,000 square feet of exhibit space in two calendar years, was undertaken for a building not to be completed until midway through the program. To date, the program is on schedule. The July 4, 1976, targets are: to have all major galleries open and to have between 40 and 50 percent of this space filled with long-term or "core" exhibit units.

The major exhibits program tasks completed during fiscal year 1975 were:

1. Conclusion of a successful Arts and Industries Building exhibits research and development program toward exhibitions for the new NASM. This included review and subsequent revision of the exhibit "Air Traffic Control" to strengthen and to improve its understandability by unification of design elements and rewriting of the labeling. The completion of an outside evaluation of the exhibit "Life in the Universe" resulted in a report which indicates a high degree of success in terms of public acceptance and understanding of the material presented.

2. Exhibits Division design for twenty projects (twelve gallery exhibit designs and eight exhibits-related designs). Establishment of standard specifications for contract design of exhibits and for separate contracts for fabrication and installation.

3. Evaluation and resulting award of twelve contracts for exhibit design and four contracts for exhibit fabrication and installation.

4. Research and resulting concept design for the world's first museum automatic central control system which led to the award of a contract to install the highly innovative five megabit multiplexing system currently being produced on schedule.

5. Initiation of two functions vital to the long-range exhibits program and the Bicentennial opening of the new NASM:

- a. Provision for basic label production and photoprocessing of silk screen materials for the Exhibits Division Production Unit, located at Silver Hill.

- b. Establishment of a Media Unit in the Exhibits Division responsible for presentation of the "message" for overall exhibits. The tasks include creative writing, film storyboarding, and accompanying narratives, film production, all exhibits editorial functions, and illustration required in all facets of museum exhibits. This Unit will bridge the gap between the curatorial research and information input and the design of environmental aspects of exhibits.



Douglas A-1E Skyraider being moved from Dahlgren, Virginia, Naval Weapons Test Center, to NASM's Silver Hill Facility in Suitland, Maryland.

The first artifact to be moved into NASM's new museum was the Douglas World Cruiser, "Chicago," in April 1975.



HISTORICAL RESEARCH

The research performed by the staff during the year was directed, for the most part, toward the planning and preparation of exhibits. The Department of Science and Technology completed scripts for numerous exhibits including:

"Benefits from Flight"—this major exhibit portrays the complex and diverse ways in which air and space flight have affected our civilization, from important technological developments to broad cultural changes.

The Department of Aeronautics completed scripts for:

"Air Transportation"—this exhibit covers the development and growth of air transportation, both United States and foreign.

"General Aviation"—the various facets of general aviation including the many types of aircraft and the vast airport network are featured here.

"Sea-Air Operations"—the hangar deck and other areas of an aircraft carrier will be recreated in this gallery.

"Balloons and Airships"—the history of lighter-than-air craft, including both balloons and airships, is told in this gallery. One feature is a 30-foot model of the dirigible "Hindenburg."

"Exhibition Flight"—the glamour and excitement of barnstorming, aerobatics, and air racing are featured in this gallery.

The Department of Astronautics completed scripts for:

"Apollo to the Moon"—this exhibit depicts United States manned space flight and lunar exploration; Mercury, Gemini, and Apollo missions.

"Life in the Universe"—this exhibit considers the possibility that life exists beyond the Earth.

"Rocketry and Space Flight"—this is an exhibit of the history and evolution of rocket propulsion, rocket engines, and space suits.

RESTORATION

During fiscal year 1975 the Silver Hill Shops restored nine major aeronautical artifacts and two major space artifacts—the Jupiter C and Vanguard Launch Vehicles. In addition, 175 other space artifacts were removed from storage, and inspected for exhibit. Twenty were selected and the necessary restoration was performed.

Over twenty volunteers worked with the regular staff in the restoration process.

PRESENTATIONS AND EDUCATION DIVISION

During the year the division acquired three additional staff members, two of them in the Education Unit and the third in the Spacearium Unit. Activities centered on planning for the new building in all of the areas of responsibility: Education, Theater, and Spacearium.

Education Unit

Two NASM-subject-matter guided school activities were developed and used to gain experience for the future. One of these titled "The History of Flight," a study of the evolution of flight, was presented to 103 groups. The other, "Space Age," combined a planetarium lesson and examination of selected space artifacts. The planetarium lesson, "The Lunar Experience," was written and produced by the division and presented in the Experimentarium located in the Air and Space Building. This combination of planetarium lesson and specimen examination proved to be very popular and received excellent response by the 415 groups involved, verifying the model of combinations of Spacearium, Theater, and gallery activities planned for the new museum. In all, approximately 9000 students participated in the guided events.

The Education Unit staff also gained experience in going out to school classrooms in conjunction with studies related to NASM. They also provided special programs of activities at NASM for Fairfax County high school students participating in a summer space science institute, for Civil Air Patrol Cadets, and for 150 elementary school teachers from California.

NASM's first Holiday Lecture Series was presented at the Carmichael Auditorium on December 26, 27, and 28, with about 250 high school students attending each session. The general topic of the series was "Life in the Universe," and the speakers were Von Del Chamberlain of NASM, Cyril Ponnampereuma of the University of Maryland, and Richard Berendzen of The American University. The lecture series received enthusiastic response, encouraging its continuation.

NASM Theater

As the year draws to a close, the NASM Theater nears completion. The 50-foot by 75-foot screen has been installed, 485 seats have been attached to the risers, an IMAX projector has been ordered and

scheduled for installation in early 1976, and the sound system is being described for contract purposes. In addition, the first IMAX film for showing to NASM visitors is under production by Francis Thompson, Inc., of New York City with funding by the Continental Oil Company. The facility promises to become one of the major features of public interest on the Mall. It will be used to help tell the aerospace story to millions of people who visit the Smithsonian.

Spacearium Unit

Public use of the Experimentarium in the Air and Space Building has ended. Attendance for the year was about 43,000. The facility will be used for the next few months in developing the first Spacearium show. The planetarium projector and projection dome will be removed and used in an exhibit in the new building. Other Experimentarium equipment will be used in the Spacearium.

In June 1975, the Government of the Federal Republic of Germany announced the gift to the American people of a Zeiss Model VI planetarium projector and funds for an associated automation system. This equipment is given in honor of the Bicentennial of the American Revolution, and will reside in the Spacearium of the National Air and Space Museum. It will help millions of Americans and visitors from many other countries begin to comprehend the significance of what they see above the landscape and to judge for themselves their own relationship to the universe.

The Spacearium theater is rapidly taking form. The seventy-foot-diameter projection dome is being erected, the lift for the planetarium projector is being completed, and the sound system is being designed as fiscal year 1975 ends.

Plans are proceeding for the first Spacearium show to be presented for general visitors. Additional programs are being written for visiting school classes.

CENTER FOR EARTH AND PLANETARY STUDIES

During its second year of operation, NASM's Center for Earth and Planetary Studies has engaged in several space research projects. The basic research material is a complete collection of photographs of the Moon taken both by unmanned probes and by Apollo astronauts. This photographic library was increased by the addition of a large library of photographs of the Earth taken from orbit. The

Center is also acquiring photographs of Mars and Mercury. Its research collection will be one of the most complete for comparative planetology in the world.

The major research project of the year was related to the Apollo-Soyuz Test Project (ASTP). Dr. Farouk El-Baz, Research Director of the Center for Earth and Planetary Studies, is Principal Investigator for "Earth Observations and Photography" on this mission. His research team is comprised of thirty-four experts in the fields of geology, oceanography, desert study, hydrology, meteorology, and environmental studies. The purpose of the experiment is to use the capabilities of the trained astronauts in obtaining scientific data while in Earth orbit.

The lunar photographic collection of the Center for Earth and Planetary Studies was used in the selection of photographs for an Atlas of the Moon to be published by the National Aeronautics and Space Administration. As material for scientific research, the collection was used in global studies of the Moon as well as detailed investigations of some surface features. The global studies included mapping of all occurrences of the relatively dark volcanic rock (basalt) on the Moon to study its distribution and reasons of localization. Also a synthesis was performed of geochemical and geophysical data on the east side of the Moon to correlate those with photogeologic interpretations. A detailed study of sinuous rilles near the crater Prinz was performed using topographic data. This study concluded that these rilles emanate from circular depressions on top of a dome and meander in lower terrain, supporting the idea that they originated as lava channels.

In cooperation with the National Aeronautics and Space Administration the lunar topographic collection was used in connection with the lunar mapping program to: (1) select areas to be topographically mapped; (2) select photographs to be used in the making of the maps; (3) assign the production priorities based on scientific value and interest; and (4) define the exact borders of map sheets. The maps which are being produced by the Defense Mapping Agency, Topographic Center, are important in both global studies of the Moon (1:250,000 scale maps) and detailed studies of particular surface features (1:50,000 and 1:10,000 scale maps).

As a member of the Task Group on Lunar Nomenclature of the International Astronomical Union, Dr. El-Baz is responsible for

the selection of features to be named on the Moon. Much of the work necessary for the revision of the lunar nomenclature system is being made at the Center for Earth and Planetary Studies. The Research Director was also appointed by the Secretary of the Interior to membership on the Advisory Committee on Extraterrestrial Features of the United States Board of Geographic Names.

Dr. Farouk El-Baz made a trip to India and the Middle East to lecture on "Scientific Findings of the Apollo Missions" and "Earth Observations and Photography on ASTP."

While in Egypt, he conferred with officials of the Academy of Scientific Research and the Ministry of Higher Education and Scientific Research concerning a joint project with the Smithsonian. This project will deal with the "Geological Characteristics of the Deserts of Egypt" and will be based at the Geology Department of the University of Ain Shams in Cairo. During the ten-day visit, Dr. El-Baz was received by President Anwar Sadat, who encouraged the project and emphasized the importance of scientific research in Egypt.

ART

During fiscal year 1975 a Curator of Art was appointed. Steps were taken to commission two major pieces of sculpture to be shown outside the new NASM building at both the Mall and Independence Avenue entrances. The sculptors, Richard Lippold and Charles Perry, were selected after an extensive search, which involved representatives of the National Gallery of Art and the National Collection of Fine Arts, as well as the Architect and the General Services Administration.

Arrangements have been made with artists Robert McCall, Eric Sloane, and Keith Ferris to paint large murals in the NASM. Robert McCall will depict the Space Flight Environment, Eric Sloane the Earth Flight Environment and Keith Ferris will render in nearly full size a portrait of a B-17 Bomber in flight as part of the World War II exhibition.

During this reporting period, NASM was offered and accepted the NASA collection of art which documents many space program activities. Delivery of hundreds of sketches, drawings, watercolors, paintings, and sculpture was made and the cataloguing process started. A selection of pieces from this collection, as well as pieces



President Anwar Sadat of Egypt examines the feature named Al-Qahira Vallis (Cairo Valley) on a globe of Mars presented him by Dr. Farouk El-Baz during a recent visit. The name Al-Qahira Vallis was recommended by El-Baz to the International Astronomical Union because the city of Cairo was originally named after the planet Mars.

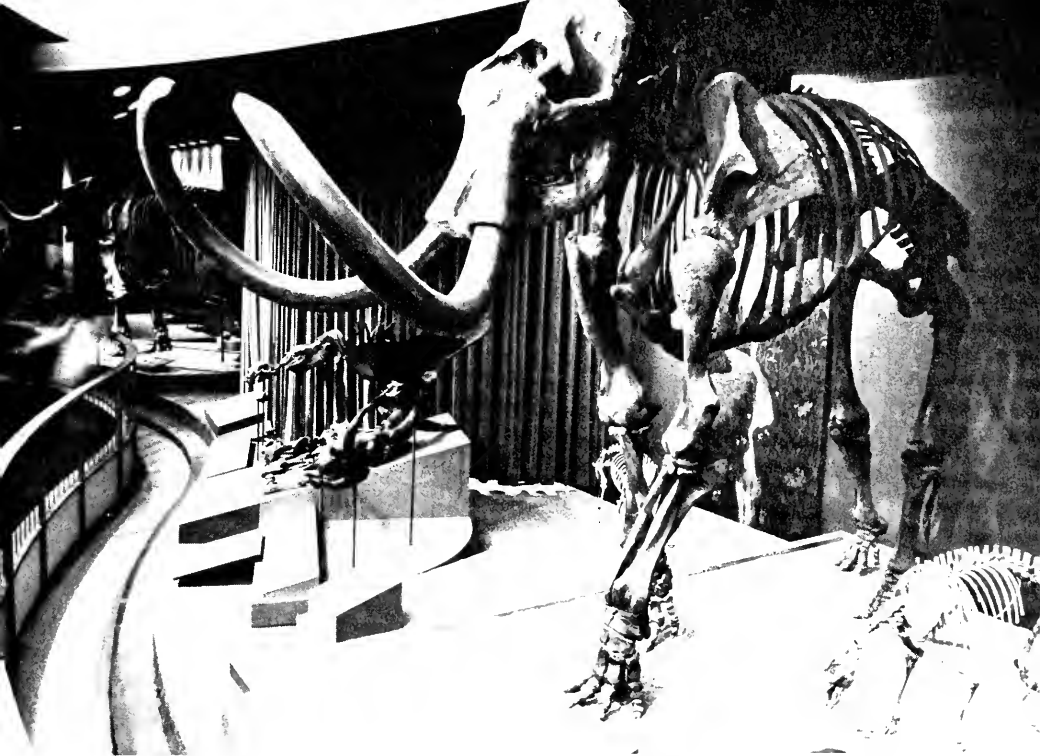
from other sources, will be exhibited in the art gallery of the NASM. This documentary art, along with many other drawings and paintings commissioned by the military services and spanning several decades, provides a unique record of man's activities in developing his ability to fly through air and space. The art work displayed on opening day will provide a record for the future of some of the greatest moments of the present through a medium that is as old as our recorded past—this intimate, human medium of the artist's eye and hand.

National Museum of Natural History

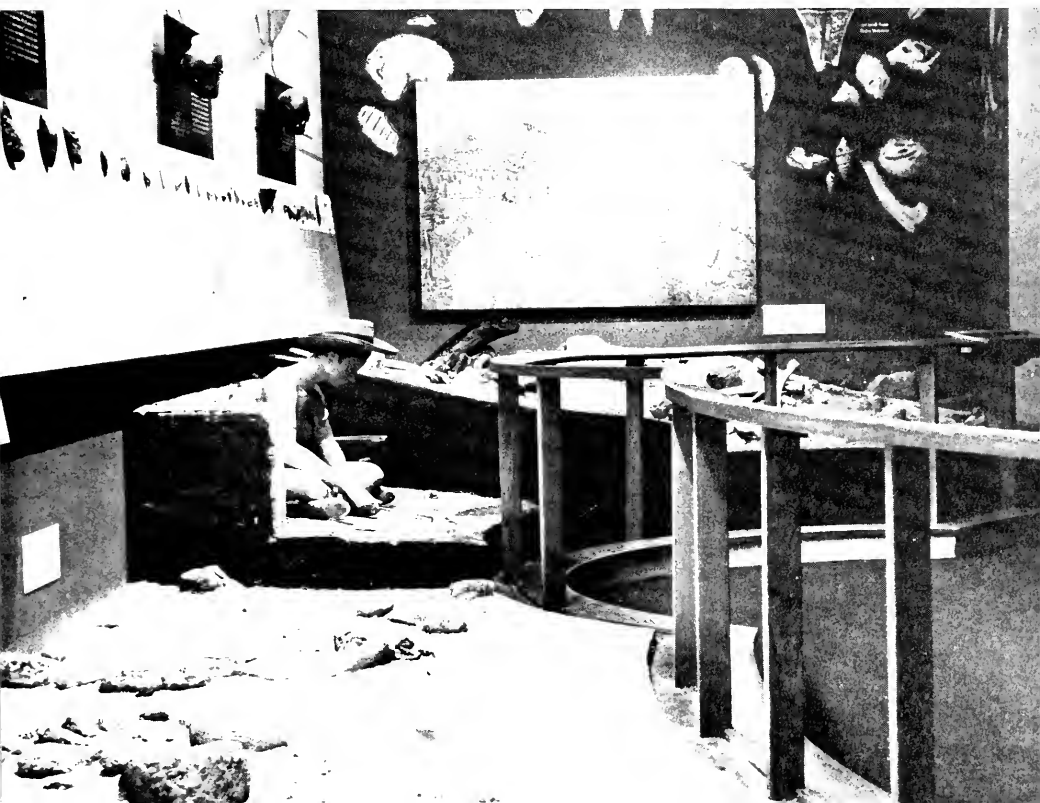
The National Museum of Natural History's service to the public is a continual commitment that goes back to its founding. The Museum is proud of its efforts during the past year to keep this tradition strong and vital. Major projects are underway that will bring the Museum closer to the people by making its exhibits more stimulating and informative and by creating a friendly and comfortable atmosphere in which the three and a half million visitors who walk through the Museum every year can find the answers to their questions about the natural world and their relationship to it.

With this end in mind, the Museum's Exhibits Committee in February 1975 finished drawing up a long-range plan for the reconstruction and refurbishment of virtually all of the present halls of the Museum over the next twenty years. The schedule is for at least one or two major openings every year. The first of these new halls, *Ice Age Mammals and the Emergence of Man*, opened in October 1974. This exhibit's thematic rigor, cool esthetic ambiance, rich cross-disciplinary scientific content, and logical positioning of objects, sets a standard for exhibits that will follow. It is not a hall dominated by audiovisual techniques or long textual labels; its message and excitement are in the realism of its objects: the huge reconstruction of the woolly mammoth that once roamed the Alaskan tundra, the saber-toothed tiger depicted attacking a giant ground sloth at the LaBrea tar pits, and the archeological sites where we see evidence of man's biological and cultural evolution during the Ice Age—from a crude circle of rocks constructed almost two million years ago at Olduvai Gorge in East Africa to the flutes and ceramic art created 30,000 years ago at Dolni Vestonice in Central Europe.

Future exhibits will deal with such topics as the dynamics of organic evolution, cultural adaptation to differing environments, diversity of life, the evolution of the earth, origin of Western civilization, and evolution of man. Broad concepts of natural history, most of them related in their content to the major theme of organic and inorganic evolution, will be constructed in axial halls—the building's major architectural spaces. These large halls will be designed to serve as the public's major passageways into and through the Museum.



Woolly mammoth in "Ice Age Mammals and the Emergence of Man," a new exhibition in the National Museum of Natural History. Below: Ice Age archeological sites reconstructed in the exhibition "Ice Age Mammals and the Emergence of Man."



The Museum foyer's Bicentennial exhibit, "Our Changing Land," is the first of these axial halls to be developed. It does not deal directly with evolution but will form a base for the understanding of a projected hall of the Dynamics of Organic Evolution above it on the first floor. General principles of ecology will be illustrated in the Bicentennial exhibit by depicting environmental changes that took place over 10,000 years in a single geographical area of the country—the Potomac Valley. An escalator is being cut through the ceiling at the south end of this hall to take the crowds coming in the Constitution Avenue entrance up into the Rotunda.

The smaller peripheral halls on the Museum's first and second floors will be used to provide more detailed information about the broad conceptual exhibits, as a space for temporary exhibits, and for a variety of exhibit halls on specific topics. One of these currently under development and scheduled for opening in the fall of 1975 is a hall devoted to South American anthropology, entitled *South America: Continent and Cultures*.

NEW WEST COURT BUILDING

Ground was broken in 1974–1975 on the first major addition to the Museum building since its east and west wings were added in the late 1950s and early 1960s. The three-story structure—adding 48,324 square feet of space to the Museum building—will be built in the Museum's west courtyard. When it is completed in mid-1976, there will be a new and enlarged Museum Shop, which will house a natural science bookstore and a sorely needed public cafeteria, that will seat 400 persons.

In the middle level of the new building will be a specimen reference library that will have natural history collections that can be handled and studied by interested hobbyists and students. Staffed by trained volunteer docents, it will serve to bridge the gap that now exists between the exhibits and the research collection area.

An important facility on the new building's ground floor, in addition to staff and Associates cafeterias, will be a school tour reception and classroom area operated by the Museum's Office of Education. School groups coming into the Museum will go directly to this area where there will be a lounge to check their coats and bag lunches. The docent can then give them a brief orientation lecture before taking them out into the Museum on their tour.



Looking over the foundation work for the National Museum of Natural History's new west courtyard addition were (left to right) Dr. Porter Kier, NMNH Director; Richard O. Giesel, Smithsonian's Business Management Office Manager; Richard W. Kernan, Group Vice President of the Marriott Corporation; Ames T. Wheeler, Treasurer of the Smithsonian; Paul N. Perrot, Smithsonian's Assistant Secretary for Museum Programs; and James F. Mello, NMNH Assistant Director.

During the 1974–1975 year the Office of Education introduced a number of new programs at the Museum. With the help of a grant from the Smithsonian Women's Committee, it instituted programs that will make many of the Museum's exhibits, films, and lectures more enjoyable to the deaf and the blind. Cassette tape players and embossed maps were made available to the blind and braille labels were installed in the Museum's Discovery Room. Interpreters for the deaf were provided for many of the Museum's Friday films and lectures in Baird Auditorium.



Blind visitors have an opportunity to touch and explore a sculpture of a woolly mammoth.

A group of children watch Mrs. Isabell Deschinsky (right), a Navaho from Houck, Arizona, and the daughter of a world-famous weaver, give demonstrations during April at the National Museum of Natural History. She is being assisted by docent Fran O'Leary. This is the first in a series of NMNH Office of Education demonstrations that show traditional ways in which items in the museum's exhibitions were used.



PLANS FOR A MUSEUM SUPPORT FACILITY

In February 1975, three of the Museum's staff, Donald W. Duckworth, Frederick J. Collier, and Dieter C. Wasshausen, made a tour of a number of major European museums to gather information about methods of modern, high-density storage technology. The trip was part of a preliminary planning effort being made by the Museum to prepare for the long-range storage of part of its collections in the proposed off-Mall Museum Support Facility at the Smithsonian's Silver Hill facility, located in the Suitland Federal Center, Suitland, Maryland. This building will be of immense future importance to the Museum. It would provide space for expanding collections—which for the past two decades have been growing at the rate of one million objects and specimens a year—and it would free valuable space within the Museum for badly needed exhibits and research functions.

DEPARTMENT OF ANTHROPOLOGY

The prehistory of the Labrador coast was long obscured by a bewildering melange of Indian and Eskimo archeological remains that defied clarification. But now the National Museum of Natural History's Dr. William W. Fitzhugh has worked out a framework for 7000 years of that region's prehistory. He believes that to understand its shifting cultural patterns one must take into account strong environmental influences that overrode other events.

Dr. Fitzhugh's first few years of Labrador field work testing this hypothesis focused on an area along the central coast. The results were published in *Environmental Archeology and Cultural Systems in Hamilton Inlet, Labrador*. During the past two years he has shifted his attention northward.

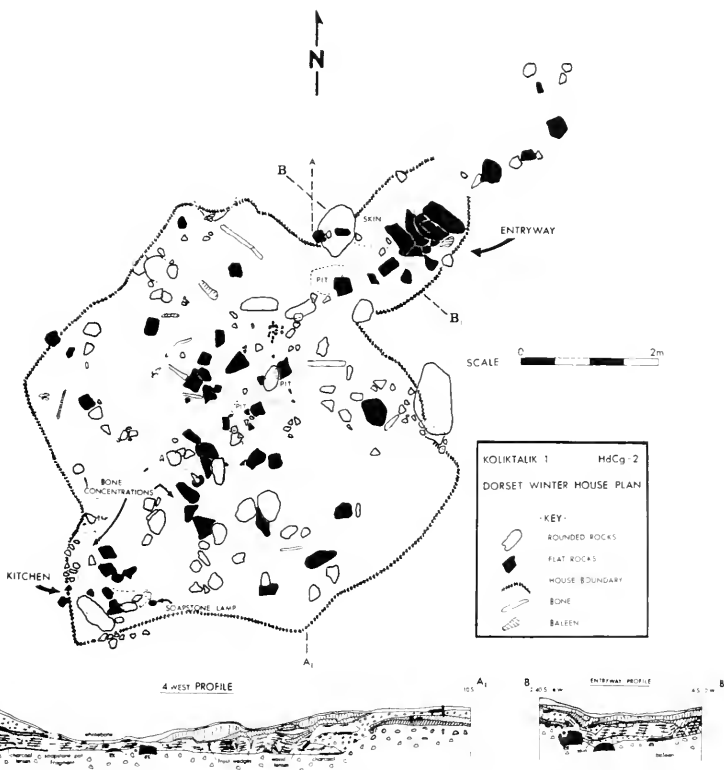
The basic cultural adaptations to the Labrador environment are at times subject to disruptive cultural-historical and ecological pressures—especially the latter. Climatic controls, operating through changes in the prevalence of forest fires, winter icing of caribou feeding grounds, and shifts of sea-ice distribution have caused ecological crises.

For the Indians in the interior, the icing over of the barren ground lichen cover or its destruction by fire means the starvation of the herds of caribou upon which they are dependent. It takes many years for the caribou herds to rebuild when this happens and



Dr. William Fitzhugh at work excavating a two-family Dorset Eskimo (ca. A. D. 400) semi-subterranean winter house in northern Labrador. *Below:* Dr. Fitzhugh holding Indian and Eskimo artifacts up to a map to show where they were found in Labrador.





Plan and cross section of Dorset Culture winter house, northern Labrador (ca. A. D. 400)

the Indian populations starve because they cannot sustain themselves on a year-round basis by hunting other animals and fishing.

Dr. Fitzhugh says that there is evidence that this drastic caribou-Indian population collapse—which we know occurred in both the nineteenth and early twentieth centuries—was a fairly common occurrence in the prehistory of the Labrador-Quebec peninsula. The consequence for the famine stricken Indians was often cultural extinction. Eventually the caribou herds would reestablish, Indian hunters would drift upward into Labrador from Quebec, and a culture would form and the cycle would repeat itself.

Labrador's Eskimo populations were dependent on a diverse marine ecology that was much more stable than conditions in the interior. But during very cold periods, when ice pack conditions in the north made it difficult to hunt along the coast, their populations shifted southward. This happened most recently in 800–100 B.C.

(the Little Ice Age) when the Eskimo Dorset culture displaced the Indians from their important fishing territories in southern Labrador. There was tension and perhaps warfare between the Indians and Eskimos during this period. The Eskimos would have been at a tactical disadvantage. The Indian was nomadic and highly mobile and the permanent Eskimo settlements would have been an easy target, especially as the Eskimos extended themselves farther and farther down the coast.

African Ethnology

The Himba are a pastoral cattle-keeping people that live in a harsh and remote mountainous area of Angola and South West Africa. Dr. Gordon D. Gibson, the National Museum of Natural History's specialist on African ethnology, is studying the life of these people. Demographic information is one part of this life but it is not easily accessible because the Himba, like most preliterate peoples, do not count the years of their lives or the years passed since critical events. Their time chronology is based on important events or "epochs" in the region in which they live. Thus, if an investigator asks a Himba when he was born, he might reply that it was during the epoch of the locust invasion as readily as we would reply to the same question with a numerical year, like 1923.

Dr. Gibson found that drought and famine, which are common to southwestern Angola and South West Africa, are the events most frequently memorialized in epoch names. Seasons of plentiful rain are also recalled, as well as pestilences (animal rather than human), plagues of insects and vermin, wars, problems brought by administration, magicians, problems (other than wars) concerning relations with other tribes, acculturative changes, deaths of important people, and the abundance of certain wild fruits.

Some events that brought neither bad nor good to the Himba but were merely remarkable are also found as names of years; for example, an airplane disaster in the region, a rainy season with many lightning storms, an abundance of red velvet mites, and the occasion when the chief of the Ngambwe asked the Himba to kill a rhinoceros so that he could have shoes made of rhino hide.

Most adult Himbas that Dr. Gibson questioned were able to provide a sequence of epoch names relating to specific events in their region, but before a number of these could be combined into a



Dr. Gordon Gibson holding an example of the hair ornament shown in the enlarged photograph next to him. *Below:* Dr. Gibson interviews some of the Himba people.



Plant-
too are
endanger-

Are
flowers
endangered
next?



These Plants, and Hundreds
More May Soon Be Extinct

3,200 American Plants Threatened by Extinction

Smithsonian Urges Action to Save Rare Orchids and Cacti

Flowers can't run away. . .

Green World Slowly Dying

Smithsonian recommends that special areas
where plants live in the wild be preserved

Animals aren't the only things on endangered list
30 species of orchids top plant

Save the Pokeweed!

It's Hard for Some People to Worry About Such Things,
But a Report Says Many Obscure Plants Are Dying Out

Man plucking threatened wild flowers to oblivion



Flora Protection



The Plants We
Destroy Could
Save Our Lives

Man's growth
tramples
wild flowers

Periled plants
-but don't
start digging

Goodbye Plants

Thousands of plant species could go the



Rare plants may be doomed

88 Northwest species threatened

Few Havens Left Flowers Can't Run

odo bird

Much of Nation's
Floral Treasure
Already Is Lost

Man endangering
many plants' lives



Please Don't Pick Those Flowers

Society Threatens Wild Flowers

The Spring Wild Flower

Plants Threatened With Extinction



Plants Threatened With Extinction

correctly ordered master list and correlated with European years, some troublesome obstacles had to be overcome.

Dr. Gibson found that persons from the same area who claim to be able to recite the names of the years in continuous order generally do not agree completely, either in the order they give them or the names of the year included. Names often differed from place to place also, some having widespread usage while others were very localized; and there were many synonyms as well as some homonymous year names among the more than 300 epochal names Dr. Gibson collected.

In spite of these problems, Dr. Gibson was eventually able to come up with a well-supported sequence for his master list of epochs. By consulting archival sources he then documented several of the epochs in the list, so that "tie points" to the Christian years are not separated by more than about five years. With this list he can determine with a good degree of approximation Himba individuals' current ages and their ages at life crises—data important for certain kinds of sociological research.

DEPARTMENT OF BOTANY

Cactus plants, once plentiful in desert areas of the United States, are being hunted and sold in plant shops for large sums of money—rarer species fetching as much as \$300 apiece. As a consequence botanists fear that they may soon become extinct. They are among a growing list of native American plants that are vanishing because of exploitation or because the areas in which they grow are being destroyed by development. Scientists estimate that about 10 percent of the total flora in the United States is either endangered or threatened.

In September 1974, Dr. Edward S. Ayensu, Chairman of the National Museum of Natural History's Botany Department, convened an international meeting of botanists and administrators at American Horticultural Society headquarters, Mount Vernon, Virginia. He was acting in accordance with Congress' 1973 Endangered Species Act, which requested that the Secretary of the Smithsonian, in conjunction with other affected organizations, begin reviewing the species of plants which are now or may become endangered or threatened and methods of adequately conserving such species.

Attending the meeting were representatives of the Departments of Interior and Agriculture, Council on Environmental Quality, National Science Foundation, Nature Conservancy, and a number of universities and botanical gardens. Foreign representatives were also present, including Dr. J. K. Morton of Canada, chairman of the committee on Rare and Endangered Species in the Canadian Flora, and Grenville Lucas, Royal Botanic Gardens, England, Threatened Plant Committee, Secretary, International Union for Conservation of Nature and Natural Resources.

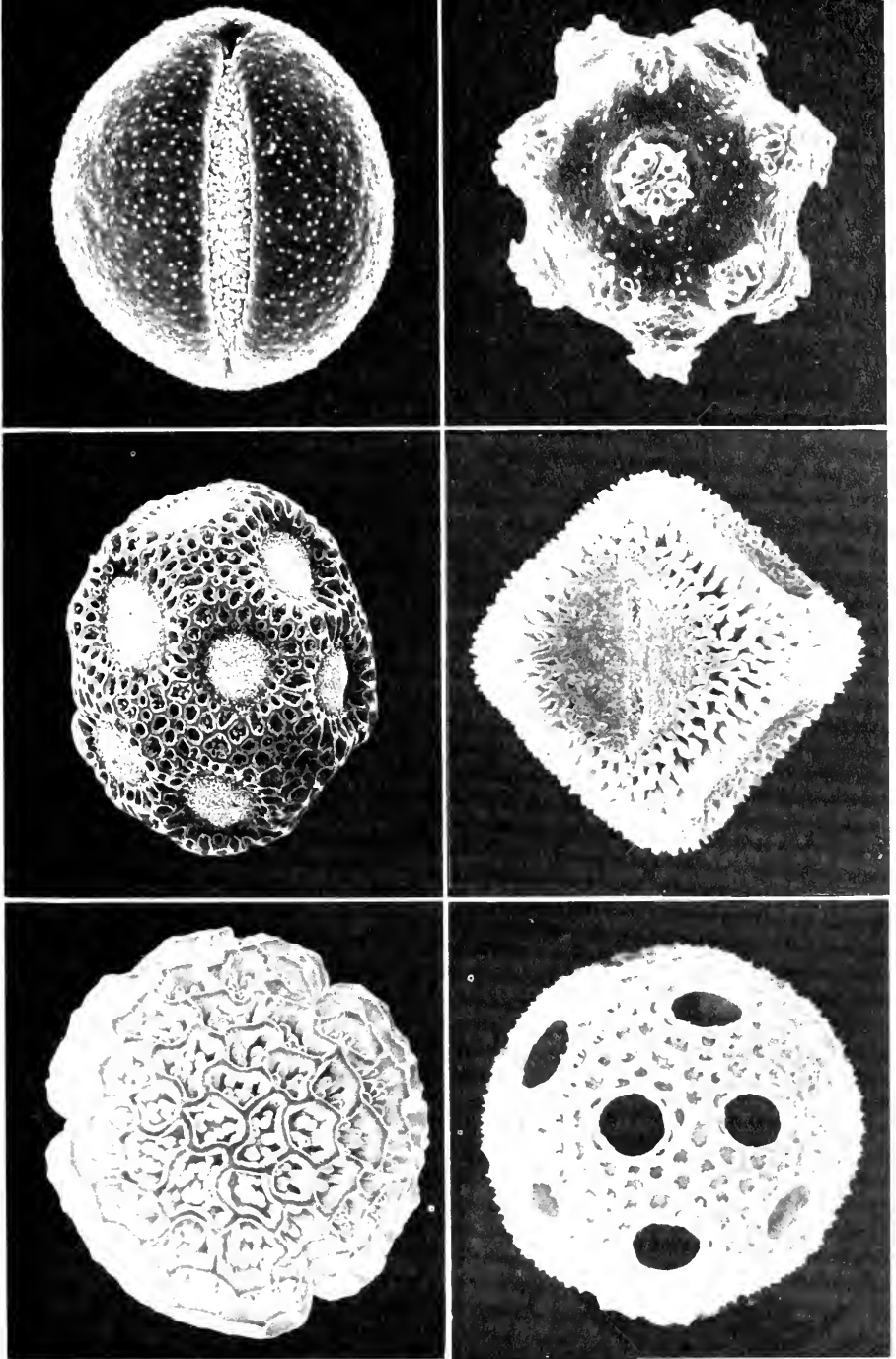
Nine recommendations, compiled under Dr. Ayensu's supervision, were subsequently submitted to Congress in a report by Secretary Ripley. Sent to Congress with the recommendations was a list of about 750 endangered and 1200 threatened plants in the mainland United States. A separate list of over 1000 endangered or threatened kinds for Hawaii was also included. These species, either very rare or with local or limited distribution, are subject to threats, or are heavily depleted by destruction of habitats or by commercial or private collectors.

The report was the first organized attempt to produce a list of threatened and endangered species for the entire United States. Museum of Natural History botanists realize that this is only a start, but a continued program is proposed to review and assess natural areas that contain endangered and threatened plant species.

Pollen Research

Dr. Joan W. Nowicke, whose speciality is the study of pollen grains, is part of an international group which is gathering scientific data on one of the most unusual and controversial groups of flowering plants, the Order Centrospermae. This Order has at least 10,000 species distributed among eleven families including the cactus, pokeweed, four-o'clock, cockscomb, and carnation families and several others. Studies have shown that nine of this Order's eleven families have a unique red pigment, the nitrogen-containing betacyanins which substitute for the anthocyanin pigments found in other flowering plants.

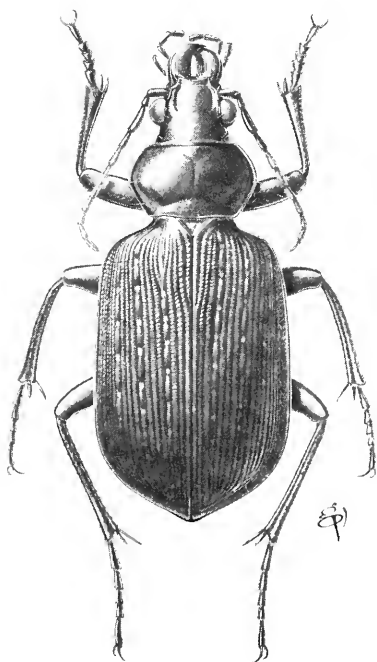
Part of the controversy is over whether the two families without betacyanins should be included in this Order. In examining the pollen grains of more than 200 species Dr. Nowicke has found that the vast majority of the grains in the betacyanin families and the



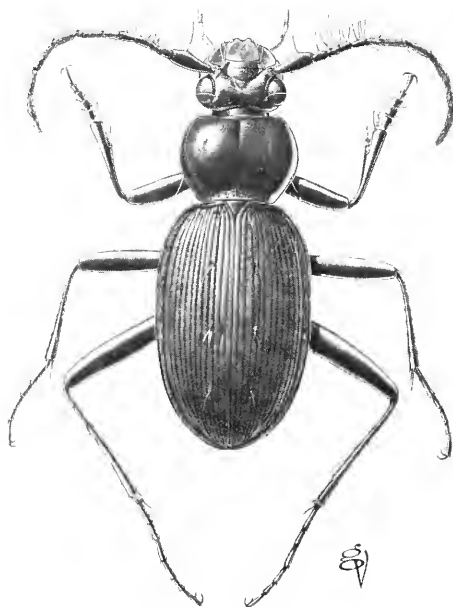
Pollen Grains in the Order Centrospermae. *Top left*: a grain from the carnation family which illustrates the common type found in the betacyanin families and the two disputed anthocyanin families. *Top right*: a specialized grain from the cockscomb family. *Middle left*: a specialized grain in the cactus family. *Middle right*: a very unusual grain, cube shaped, and found in a small tropical family, the Basellaceae. *Lower left*: the pollen grain of *Bougainvillea*, a member of the four-o'clock family. *Lower right*: another member of the carnation family, but a specialized type. All of the above pictures are highly magnified scanning electron micrographs.



Dr. Terry Erwin studying ground beetles that have moved into the trees on Barro Colorado Island.



Calosoma alternana.



Loricera rotundicollis.

Artist: George Venable.

two disputed families have the same surface patterns. Thus pollen morphology supports a close tie between the betacyanin families and the two anthocyanin families. Using the result of the study as a base, Dr. Nowicke is surveying the pollen surface patterns of families which are thought to be related or derived from the Centrospermae, and thus far it appears that no other flowering plants branched off from the Centrospermae group.

DEPARTMENT OF ENTOMOLOGY

"Where Have All the Ground Beetles Gone?" was the title of a lecture given last year by Dr. Terry Erwin at the National Museum of Natural History. Only a handful of scientists in the world are as well qualified as he is to address such a question even though the ground beetle family (Carabidae) is the third largest family of beetles (40,000+ species).

Dr. Erwin's field observations at the Smithsonian Tropical Research Institute's (STRI) Barro Colorado Island have given him evidence that ground beetles moved from tropical wetlands—the "boiling pot" for their evolution—in an ecological progression from the wetlands onto the forest floor, then into the forest undercanopy, and finally upward into the treetops. He has pioneered in tracing the specialized tropical life cycles developed by the beetles on the forest floor and undercanopy and plans future work at STRI and elsewhere that will eventually take him on eighty-foot-high catwalks so that he can study life in the treetops. There is an urgency to this project because when the forests are cut, as is happening in Latin America, hundreds of these forest top species are irretrievably lost.

The National Museum of Natural History has a half-million ground beetles in its collections, making it probably second in size only to the British Museum. When Dr. Erwin came to NMNH in 1971 he found these collections poorly organized because no ground beetle specialist had ever been employed at the Museum before. He has since sorted all of these specimens to tribe level, and many to generic and species level. The wealth of data available in the collections and the opportunity to work at STRI launched him into a massive systematic study of the ground beetles of Central America.

When completed, this study will cover more than 2000 species, probably 40 percent of them undescribed in scientific literature.

All of the natural history and geographical information on each species is being computerized by Dr. Erwin's wife La Verne, who is a full partner in the project and will co-author the six-volume study. Heretofore, projects one-third this size have taken from twenty-five to thirty years but computerization will enable them to finish it in a fourth of the time.

The computer will be able to generate ground beetle distribution maps and keep them updated as new material is acquired; and make it possible to correlate faster than ever before such specimen-related data as altitude, range, plant association, parasites, and so on. Up to sixty categories of data are being fed into the computer for each newly acquired specimen, as compared to an average of only fifteen recorded for older specimens.

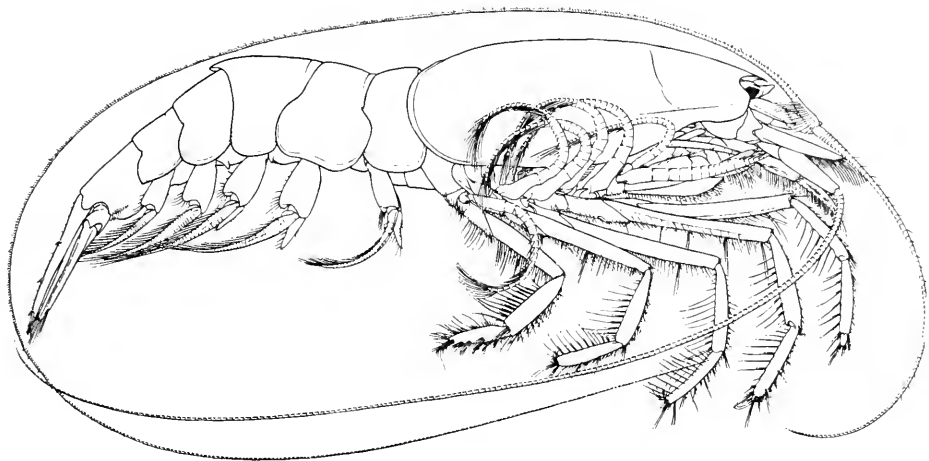
The Erwins have designed each volume to be a systematic study with much natural history data included which can be used by amateurs or mathematical ecologists to simply identify specimens or to seek geographical and ecological data. And from volume six, the all-important faunal analysis, people will be able to learn where all the ground beetles have gone.

DEPARTMENT OF INVERTEBRATE ZOOLOGY

At the National Museum of Natural History a great deal of interest in Ascension Island's invertebrate animals has been stimulated by a field trip made there in 1971 by Dr. Raymond B. Manning, a specialist in decapods (an order of crustaceans that includes shrimps, lobsters, and crabs). Like earlier scientists, he was interested in Ascension's land crabs. But casting his net over a wider area, he took the opportunity to make an intensive survey of the marine life in the Island's lava tidal pools and shallow shore waters.

Because of Ascension's isolation and relative geological youth—estimates of its age make it no older than one million years—it is an excellent natural laboratory on which one can study where its marine animals originated, how this life was dispersed and carried to Ascension by currents and other means, and what adaptations it has made to its environment since its arrival.

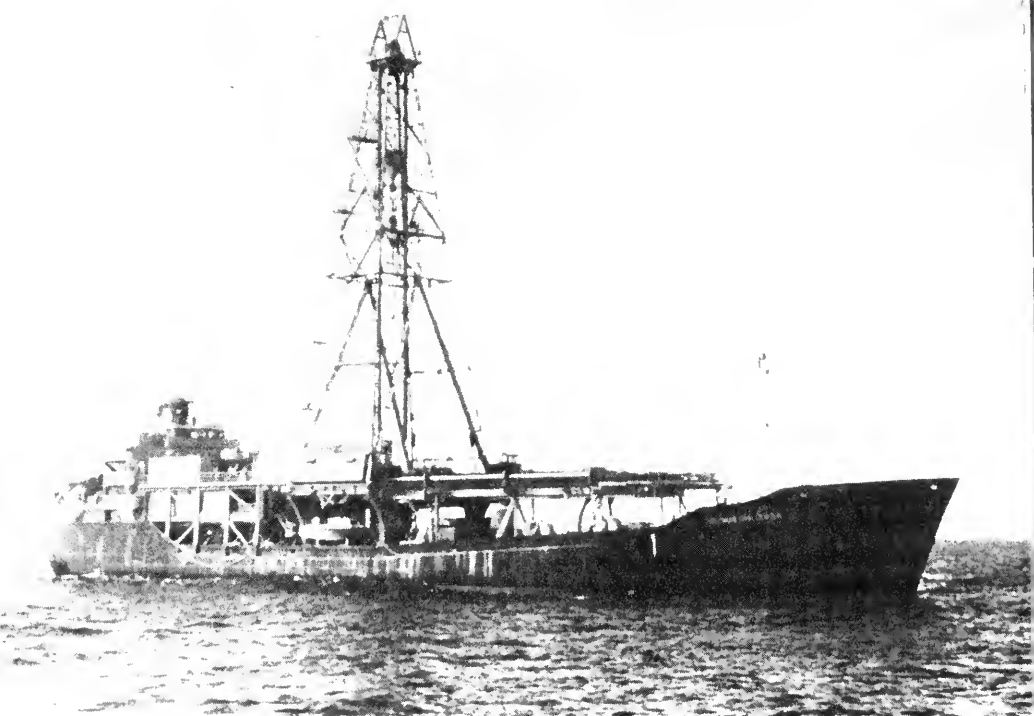
An example of the Island's puzzling fauna, collected by Dr. Manning in two tidal pools on the western edge of the Island, were two unusual shrimps, one unique in being clawless and lacking sexual modifications. In the report on the two shrimps, written



Clawless Shrimp *Procaris ascensionis*. x7. Drawing by Dr. Fenner Chase.

Dr. Raymond Manning examines an Ascension crab.





Glomar Challenger. Below: Dr. William Melson and colleague, Dr. Fabrizio Aumento, examining core samples aboard Glomar Challenger.



with his colleague Dr. Fenner A. Chase, Jr., *Two New Caridean Shrimps, One Representing a New Family, from Marine Pools on Ascension Island*, the NMNH scientists noted that one of the shrimps had relatives living in subterranean fresh water habitats in the West Indies and Galapagos Islands whereas the other one had no obvious close relatives. Within a year a relative of the latter shrimp was found in a similar habitat, a saltwater pool in a lava flow, in Hawaii. How two very similar species of the same genus came to occupy the same habitats in such widely separated areas remains an intriguing mystery.

Drs. Manning and Chase are now engaged in completing their study of the more than forty other species of decapods collected by Dr. Manning on Ascension, based on samples taken from a variety of shallow-water habitats there. Dr. Joseph Rosewater has recently published a survey of the Ascension mollusks collected by Dr. Manning, *An Annotated List of the Marine Mollusks of Ascension Island, South Atlantic Ocean*, and Dr. David L. Pawson is studying the echinoderms Dr. Manning brought back. The deep-water fauna off Ascension remains poorly known.

DEPARTMENT OF MINERAL SCIENCES

"The ocean is almost like a mirror today—almost glassy smooth, like a great quiet lake. An intense morning—looking at our longest core so far—core 44—7.1 meters of gloriously interesting material. All is well! All is delightful for Leg 37," so wrote Dr. William Melson, Chairman of the NMNH Department of Mineral Sciences, who spent part of last year on board the U. S. Research Vessel *Glomar Challenger*, the ship that for six years has been circling the earth, relentlessly drilling and coring the ocean floor for scientific purposes.

This notation in his log was written the day the drill reached 563 meters (about 1800 feet) on its way to an historic 1910-foot penetration of the ocean floor.

It was to be the deepest of five borings made during Leg 37 in 1600 feet of water at sites off the Azores near the Mid-Atlantic ridge. Each of the five holes—measuring 333, 405, 1102, 1092, and 1912 feet—exceeded the previous record penetration into the volcanic rocks beneath the ocean floor. The five borings yielded more than 3000 core samples of igneous and sedimentary rock, which

are now undergoing laboratory analysis at the Smithsonian and other major research centers in the United States, Union of Soviet Socialist Republics, Canada, France, Germany, and Great Britain.

Earlier legs of the *Glomar Challenger* had only sought to bring up cores of the sediment layers that overlie the hard rocks of the ocean floor. These have given an immense amount of paleontological information about the early history of the earth. On Leg 37, however, the *Glomar Challenger* had for the first time directed its capabilities at the ocean's basement rock.

Its probes made it possible to study how crust forms during sea floor spreading. The data from Leg 37's sites confirmed that the sea floor is spreading from the Mid-Atlantic rift at the rate of 1.1 centimeters a year a few hundred miles south of the Azores. The scientists were also able to see what is happening deep inside the earth's mantle, locate mineral and oil deposits in the oceanic crust, and study the origin of the magnetic strips below the earth's ocean basins and past reversals of the earth's magnetism.

Dr. Melson was cruise co-chief scientist with Dr. Fabrizio Aumento of Dalhousie University, Halifax, Nova Scotia, Canada. Assisted by information provided by the thirteen other scientists comprising the international crew, they made such critical decisions as the exact location of the drill sites.

DEPARTMENT OF PALEOBIOLOGY

In late January 1975 in the cattle ranching country of northern Queensland, Australia, paleobotanist Dr. Francis Hueber pried out of a low sandstone ledge the fossilized remains of a 360-million-year-old Devonian plant. It was the best preserved specimen found of this Devonian genus and for Dr. Hueber it was a major stride forward on a project that began seventeen years ago.

Back in 1958 he had collected four or five isolated fragments of the same genus in New York's Catskill Mountains. Unfortunately, the fragments, which, oddly, were starshaped in cross section, were not large and complete enough to indicate much about the plant. More fossil material was needed. Because it was unlikely that any more would turn up in New York, Australia seemed to be the best place to look, since a piece of the same genus had been found there in the nineteenth century at a site on the Fanning River in northern Queensland.

It was nine years before Dr. Hueber was able to get to Australia. When he did it was to collect fossil material in the State of Victoria connected with research he was doing on other Devonian plants. But he took the opportunity to go north for a few days and locate the site on the Fanning River. In Devonian times the area apparently had been a great river delta near the ocean, and trees and other plants had floated down river and sunk into the delta sands and muds. Dr. Hueber hastily surveyed the area's sandstone formations and was encouraged when he found more scraps of the fossil. The material that he was able to collect turned out to be rather poorly preserved but revealed the fact that the plant instead of being herbaceous of habit was in truth a tree. But another problem arose—were the star-shaped strands of wood the tree's roots or branches? The anatomy of the trunk was of a complex nature and did not give clear evidence for orientation of the specimens. Therefore, which way was up?

In 1970, Dr. Hueber returned to northern Queensland after Don Wyatt, an Australian geologist, wrote that high water in the Fanning River area had cleared a mudstone layer in which two masses of the fossilized tree he was looking for were exposed. The geologist had interpreted the fossils as the tops of the trees with their branches spread out through the matrix. Dr. Hueber collected a considerable amount of the fossil material but when he got it back to the Museum found it useless in solving the problem. The tree fragments had so badly rotted before fossilization that it was impossible to determine clearly the orientation of the specimens.

It was on his third trip in 1975 that Dr. Hueber and Don Wyatt discovered the key 8-inch by 11-inch chunk of log weathering out of the sandstone ledge. Though it has not yet been cut into sections at the Museum and studied, Dr. Hueber is reasonably certain that the anatomy of the specimen is intact and that the orientation of the specimen indicates that the star-shaped strands are the tree's roots.

Importantly in tracing the early evolution of the plant kingdom this discovery marks a point in geologic time at which roots can be defined as an integral part of the plant body. Most land plants during the Devonian Period (which began 395 million years ago) relied upon the absorptive abilities of their stems which trailed along or were partially buried in the muds and swampy soils of the





Facing page, above: Dr. Francis Hueber at work in his office. *Facing page, below:* The fossilized remains of a 360-million-year-old Devonian plant pried out of a sandstone ledge in Australia by Dr. Hueber. *Above:* Site of Dr. Hueber's study of Devonian plant fossils near the Fanning River, Queensland, Australia.

ancient river deltas and coastal swamps. The root was gradually evolved over a period of about twenty-five million years and the plant Dr. Hueber is studying represents one of those very early plants in which the differentiation of the plant body into stem and root was achieved. It marks an important step in the history of the plant kingdom.

DEPARTMENT OF VERTEBRATE ZOOLOGY

Dr. Richard Thorington continued his studies on troops of howler monkeys on Barro Colorado Island at the Smithsonian Tropical Research Institute. The monkeys usually can be located by their strong smell and noisy chorus. A troop's eighteen monkeys move slowly along through the treetops, feeding on the fruit of fig and hog plum trees and roaring and howling at any stranger who dares invade their territorial area.

Many studies of the social behavior of the Barro Colorado howlers have been made, dating back to the work of Dr. C. R. Carpenter in the 1930s, but Dr. Thorington is the first scientist to undertake a study of their long-term population dynamics and the factors that influence it.

An anesthesia dart-gun is used to get the monkeys out of the trees. When they wobble and fall they are caught in a net and then morphological measurements, toothcasts, fingerprints, blood samples, and biopsies are quickly taken. Before they are released white bands are freeze branded on their tails so that they can be identified in the future for recapture. More than forty howlers have been marked in this way since 1972, when the study began.

The project has already yielded interesting information. Chromosome analysis of tissue cultures sent to Dr. Ma and Dr. Jones at Harvard's New England Regional Primate Research Center, shows that there is an odd translocation of a Y chromosome in the male howler over to one of the (nonsex bearing) autosomes. This gives the female 54 chromosomes to the male's 53; and the patterning of footprints, fingerprints, and tailprints of the Barro Colorado howlers and those of Costa Rica have been found to be curiously different. Dr. Thorington and Dr. Jefferey Froehlich (at that time, a postdoctoral student) are studying this patterning to see if there is any basic genetic difference in the two monkey populations.



One of the howler monkeys in a troupe on Barro Colorado Island studied by Dr. Richard Thorington. *Below:* Dr. Thorington measuring the circumference of one of the trees where the howler monkeys feed. Such data is used in the study which correlates productivity of the forest with fluctuations in the monkey population.



Most of Dr. Thorington's findings will come in over a much longer term because howler monkeys live for a long time, perhaps twenty years. Gradually he is documenting life spans, death rates, and the frequency of births to different aged females.

By marking and mapping the trees in the forest that the monkeys use—and studying the trees' flowering, fruiting, and leafing cycles—Dr. Thorington hopes to obtain indices of the annual productivity of the forest and find what impact its fluctuations have on the monkey population.

Results of the research have indicated a long-term stability of food resources. In 1955 there was a study of where the monkeys moved and where they fed. Many of the trees are the exact same ones in which the howlers feed today. Over a twenty-year period the distribution of resources appears to have changed little. This is an important factor in the social life of these monkeys, as well.

But there are gradual inexorable changes occurring in the monkeys' habitat. Botanists who have examined the Island's fig and hog plum trees for Dr. Thorington have noted that the trees do not seem to be producing seedlings, which leads him to believe that the main food supply of the howlers is going to become less and less abundant in the years ahead.

Yellow fever has the potential of causing a swift and devastating impact on the monkey population. Dr. Thorington in collaboration with the Middle American Research Unit (MARU) has been able to establish that howlers do not have antibodies to this disease. In 1949, the last time yellow fever swept through the Central American forests, it killed up to 75 percent of the Island's monkeys. Since then the Island howler population has increased from 250 in 1951 to 800 in 1959 and in the last eight years has risen to 1500. But in 1974–1975 yellow fever cases have been reported again in the forest, spreading toward the Canal Zone, and Dr. Thorington is afraid that an epidemic could strike Barro Colorado Island.

National Zoological Park

In the Orient, this is the year of the hare. The past year at the National Zoological Park could be well called the year of the caterpillar—tractor that is. The highest visible sign of activity to the visitors and the staff has been the construction program throughout the Zoo. One-third of the exhibition areas have been in the process of renovation. The lion and tiger exhibits have grown from a hole in the ground to a recognizable structure. One can now see the outline of the walls, moats, and the viewing areas. Internally, the quarters for the big cats are evolving in an orderly fashion from the beginning of seeming chaos. Delays from strikes and weather have occurred but it is now hoped that occupancy and dedication will take place about Easter of 1976.

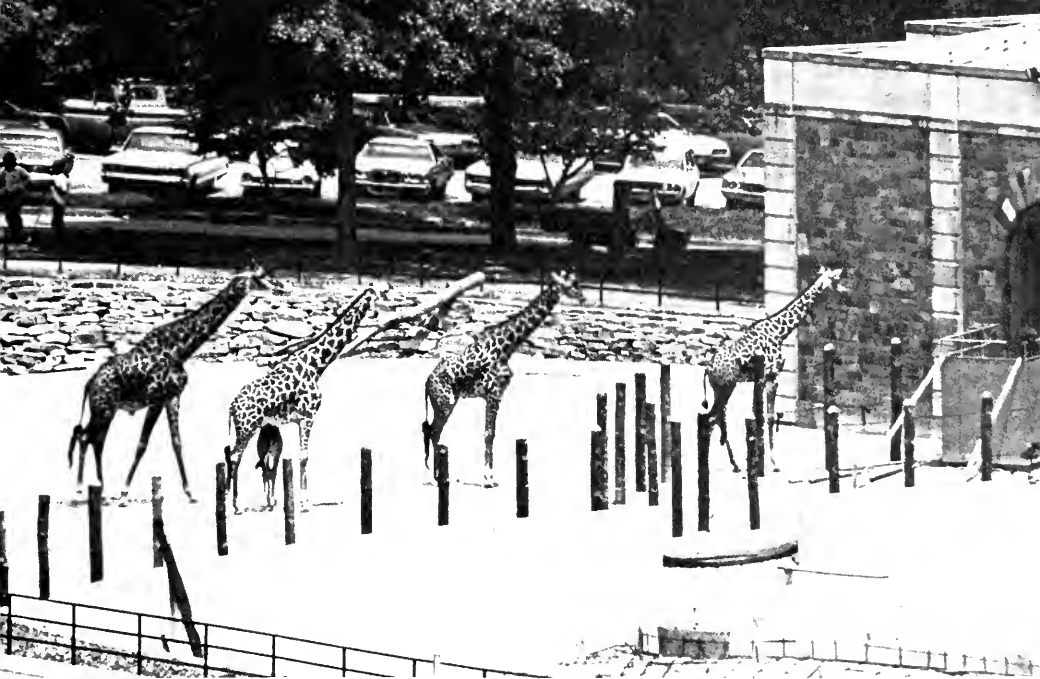
The occupants of the elephant house suffered the most inconvenience for they were confined to their quarters almost the entire year while their outside yards were being enlarged by a factor of three. The visitor has had on display the lumbering antics of bulldozers, backhoes, cranes, and cement trucks accompanied by their frantic hard-hatted keepers. They have pushed their work so that the giraffes were returned to their outside yard five months ahead of the contract completion date. When the outside doors were finally opened, the giraffes gazed out on their new yards, which are five times larger than their previous inadequate space, for three days. Finally, the late afternoon the third day the young colt which had been born in late spring ventured out and was quickly followed by his mother and the other giraffes. For the first time in the history of the Zoo, the giraffes have enough space to run, kick up their heels, and frolic. The sight of these graceful animals cantering is indeed a reward for the months of planning, contract negotiations, confinement, and general inconvenience to the visitors. The giraffes are viewed behind a low moat. The path around the yard extends up on a low hillock to the north of the building so that the visitors actually have a giraffe eye-level view of these graceful animals. Also completed were the new pygmy hippopotamus yards which are the same size as previously but have a new moat system and outside pools. It is anticipated that shortly the Indian elephants will have the use of their new yard with its much enlarged bathing pool and that by Thanksgiving of 1975 the hippopotamuses,

African elephant, and Indian rhinoceroses will be enjoying spacious outside quarters.

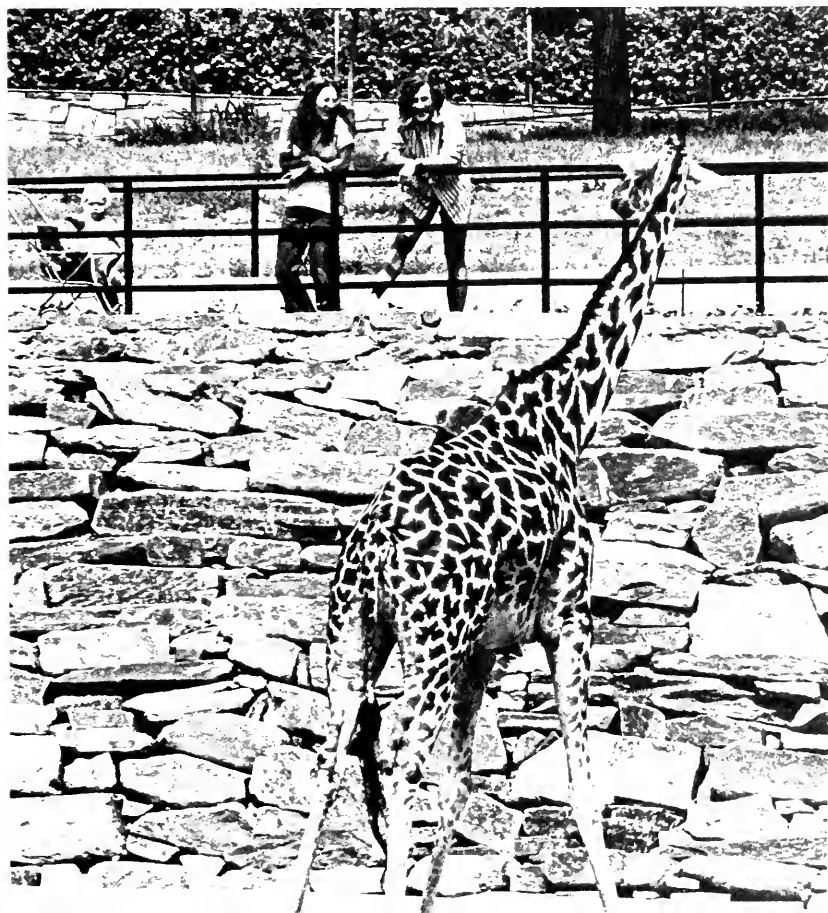
The level plaza surrounding the bird house is being completely redeveloped for three new duck ponds in front of the building, crane yards on the left, new flamingo pool, and exhibit behind in additional small cages scattered throughout the area. The project has been divided into two phases. Roughly half of the work is to be completed before the second half starts so that the birds are not completely removed from their homes. Visitors arrive at the side entrance to the bird house after passing the old eagle cage on the right and the new waterfowl pond construction on the left. The breeding pair of American bald eagles rather disdainfully supervised the work in progress. They did take time off to build a nest and lay two eggs but, unfortunately, the eggs did not hatch. With good luck and fair weather the project will be completed about Thanksgiving of 1975.

Remodeling of the 1904 monkey house, as described in *Smithsonian Year 1974*, was completed early in the winter and the cage decorations were assembled. Because it is so difficult to duplicate natural trees in such a manner that the animals cannot destroy them with their ingenious minds and busy fingers, it was decided that the timbers developed in the past few years for children's playground equipment would be used. The monkey habits, whether they be climbing, jumping, leaping, or swinging were taken into consideration and a specific design was made for each species. The swinging monkeys, such as the spider monkey, have plenty of ropes to swing from while the leaping monkeys, like the colobus, have platforms on which to bounce back and forth. Altogether it has produced a very active exhibit which is pleasing to the visitors. Zoo personnel are highly pleased that the monkeys accepted their new furniture with joyous abandon. Despite an aggressive, competent, supple minded, and knowledgeable staff, it is with trepidation that we attempt to predict the behavior of animals. It is very heart warming to have the monkeys' approval of our plans and efforts.

The first Smithsonian Associates Women's Committee auction in mid-May of this year marked the official dedication and opening of the monkey house. Following a delightful meal served in the newly refurbished center of the old building, items and services



Giraffes in the new yards at the National Zoo. In the foreground can be seen a section of the Indian elephants' yard under construction. *Below:* Giraffe in its new yard at the National Zoo enjoys "people watching."





A view of one of the redecorated cages in the renovated Monkey House at the National Zoo. The "furniture" inside the cage was specially designed for these spider monkeys. The logs are solid oak. The ropes, simulating lianas, are two-inch thick manila rope. All the cages in the Monkey House have been designed with special features for the specific monkeys involved.

pertaining to the various bureaus of the Smithsonian Institution were spiritedly bid for by a distinguished company of humans. One of the elderly and distinguished colobus monkeys was heard to comment that even for the sake of education he would never make a human out of himself. All in all, the monkeys seemed to enjoy the evening with slightly blase tolerant amusement. The visiting public has expressed great pleasure in the "new" old monkey house, commenting that the lowered cage floors give good visibility to small children and that the plateglass does not obstruct the viewing. The monkeys are appreciative of the fact that they no longer have to smell human beings.

In addition to the three major pieces of construction all through the Zoo, there have been smaller jobs being accomplished preparatory for the Bicentennial year. At the year's end, one dozen projects were underway and on target, with twice as many due to be active

by late fall. Work is now in progress on ramps for the small mammal house and reptile house. When these are completed, all exhibits will be accessible to wheel chairs and baby carriages.

Since the Zoo has changed its contracting practices to one of direct contracting rather than, as formerly, through the General Services Administration, the workload has increased tremendously. The Zoo was fortunate in having Mr. Robert C. Engle join the staff as engineer and Mr. Fred Barwick as Zoo contracting officer.

*CONSERVATION AND RESEARCH CENTER,
FRONT ROYAL, VIRGINIA*

On June 22, 1975, the General Services Administration transferred some 3100 acres of magnificent fields, forest, pasture, springs, and farm structures to the Smithsonian Institution, thus making official and legal the Zoo's tenancy at the old cavalry remount station at Front Royal. Previously, the Zoo had been occupying and developing this area under a use permit. Dr. Christen M. Wemmer, who joined the Zoo staff from the Brookfield Zoo in Chicago, heads up the Center ably and is enthusiastically assisted by fifteen employees, some of whom were previously state or federal agricultural employees and are continuing their long careers at the site. Together they have established successful farming, maintenance, and animal management programs. Last year two large pastures were enclosed and one of the old horse barns refurbished. This year two additional horse barns were refurbished and four more large pastures were enclosed. Now in residence are Felds deer, bongo, kangaroo, zebra (two foals born), bactrian camels, rheas, as well as the scimitar horn oryx and Pere David deer which were established last year. In cooperation and conjunction with the newly formed Minnesota State Zoological Garden at Minneapolis, eight bactrian camels were secured and are now in residence at the Center. Maria, our female bactrian camel, returned to us from Cleveland bringing her consort, Jimmy. Early this spring one of the new females produced a lovely, if somewhat grotesque, calf.

Dr. D. Kleiman planned a facility at one of the barns in the central part of the Center's campus for a comparative canid behavior study. The cages for maned wolves, bush dogs, and crab-eating foxes have been constructed and presently two pairs of maned wolves are in residence and under study. These animals were

secured through the cooperation of Brazilian officials and Dr. Mario Autuori of the São Paulo Zoo. The study of these animals, with particular emphasis on their social and reproductive behavior, will continue for several years.

Besides maintaining the present facility and producing 300 tons of hay for general Zoo use, exciting plans and programs are being formulated for the Center's future development.

OFFICE OF ANIMAL MANAGEMENT

The most notable event for the Office of Animal Management was the hatching of a kiwi chick early in the year. This is the first time that this New Zealand bird has hatched outside of New Zealand and Australia. The incubation period is uncertain although reported to be fifty days. The male, who incubates the egg, hid the egg for a time, and the office was only aware of its presence for the twenty days prior to its hatching. Great consternation prevailed since there was no knowledge of how to feed the young chick; finally it was decided to double the amount of feed being fed to the adults and hope for the best. Fortunately, the male instructed the young chick in the proper methods of feeding and under this regimen it has thrived and grown mightily. The female pays little or no attention to either the egg or her offspring, leaving everything after egg-laying entirely up to the cock.

The lesser pandas produced a litter of four kits, which means that these animals are now breeding into the second generation. It is hoped a strong breeding colony of this charming Asiatic animal can be established.

The nene geese, inspired by the example of the previous years, decided to outdo themselves this year. Between February and March nineteen goslings were hatched from the eggs of three laying pairs. At one time the Zoo's exhibit consisted of twenty-eight of this highly endangered Hawaiian state bird.

The Utah prairie dogs produced ten babies this year. The Office of Animal Management completed its studies of these animals and contemplates sending them to the University of Utah for additional observations.

The white tiger cubs, reported last year at Cincinnati, continue to thrive. They are straight-legged, big-boned, husky young cubs, and are expected to be returned to Washington, D.C., next Easter.



The first kiwi ever hatched and reared outside of its native New Zealand, except for Australia, was an outstanding event for the National Zoo. After the female lays the egg she has no further interest in it and the egg is incubated for a period of 75-80 days by the male. The chick was named Toru, the Maori word for "three." Photo: *Washington Post*.

Growing at the rate of two pounds a day, the first born bactrian camel at the Front Royal Conservation and Research Center brings the National Zoo's camel herd up to eleven, the largest herd in North America. The baby was named "Number One." Photo: Leo Slaughter.



In keeping with the Zoo's plans and responsibility toward the animal kingdom, animals continue to be paired by sending them out on breeding loan to other zoos. At the present time thirty-two mammals, eight reptiles, and numerous birds are deposited in other zoos. Cooperation among all zoos in the United States is growing. More and more emphasis is being placed on replacement of zoo stock by zoo breeding and interexchange of animals.

The Office of Animal Management, under general curator Jaren Horsley, is continuing efforts to enrich contributions to animal-keeping and to broaden representation in the ranks with the hiring of ten women animal-keepers. Curatorial involvement in animal-exhibit planning resulted in excellent cage furnishing of the monkey house. Research activities increased in the office with two papers given by animal-keepers at professional meetings and with the addition to the staff of a herpetologist, Dr. Dale Marcellini, who will develop the research programs based on the collection.

The most distressing death during the year was that of the large, old, male komodo dragon, Kalana, who had been in residence for five years. During the past few months he failed noticeably, losing weight, and decreasing in activity. It was finally determined that euthanasia would be best for the animal. Post mortem revealed that he had a growth on the heart valve which produced a valvular insufficiency, with the associated backup of blood and circulatory deficiencies common in this condition.

The giant pandas, Ling-Ling and Hsing-Hsing, continue to be a main visitor attraction. This past April the young female came into heat for the third year. As reported last year, expectations of having a successful breeding were high. Unfortunately, the male was still not physically mature during this meeting. We hope the next meeting in April will prove successful.

OFFICE OF ZOOLOGICAL RESEARCH

The year for the Office of Zoological Research has been most productive. Previous programs and studies have continued with some major additions. In the fall of 1974, final plans were made with Venezuelan scientists to inaugurate a program of field studies in vertebrate behavior and ecology in conjunction with Venezuelan researchers and students. Dr. G. G. Montgomery visited Venezuela

in June and July and radio-tracked both the giant anteaters and golden anteaters on the ranch of a Venezuelan collaborator, Sr. Tomas Blomh. In January Dr. Eisenberg and Dr. Marcellini undertook preliminary field investigations on herpetological and mammalian studies. In March Dr. Eisenberg and Dr. Eugene Morton continued the field research undertaken in January by Dr. Eisenberg. In June Dr. Eisenberg and two graduate students spent considerable time in the field working on the general problems and specifically that of the small mammals. It is anticipated that the work in Venezuela will continue for several years and should prove extremely fruitful.

Dr. Devra Kleiman of the research staff has started a study in the communications and reproduction behavior of South American canids. This animal group provides a variety of social organization (e.g., the maned wolf is a solitary animal, the crab-eating foxes live in pairs, and the third individual to be studied, the bush dog, lives in family groups or small packs); a difference in physical size; and a separation in geography. Cage facilities have been constructed at the Front Royal Conservation and Research Center and two pairs of maned wolves are now in residence and under study.

Dr. Eugene Morton joined the Office of Zoological Research this past fiscal year as staff ornithologist. Dr. Morton has previously worked at Smithsonian facilities in Panama and the Chesapeake Bay Center on behavior and vocalization of avifauna. Currently, Dr. Morton is working in Venezuela and at Front Royal, where he has initiated studies on bluebirds and turkey vultures.

W. P. Dittus received his Ph.D. in August 1974 on work done in Sri Lanka on the toque macque. Dr. Dittus, at that time a member of the research department staff, is presently continuing his work in Sri Lanka under the auspices of the Max Planck Institute.

In April, Victoria Guerrero received her Ph.D. degree on studies concerning the hormone control of courtship behavior in the green acouchi. All of her investigative work was done at the Zoo.

In May 1975, Dr. Montgomery chaired a conference on arboreal-folivore at Front Royal. The conference gathered together thirty international scientists to discuss the impact of vertebrate and invertebrate feeding on the leaves of the tropical forest and the co-evolution of animals and plants in the tropical forest. The pro-

ceedings of the conference will be published later as part of the Smithsonian series.

Under the joint auspices of the National Zoological Park and the National Institutes of Health, about forty scientists participated in a conference on the behavior and neurology of lizards held at Front Royal in May 1975.

OFFICE OF ANIMAL HEALTH AND PATHOLOGY

Work in this department has continued with daily treatment and disease investigation throughout the Zoo. Studies described in last year's annual report have continued. Dr. Robert M. Sauer resigned as pathologist and has been replaced by Dr. R. Montali, from Johns Hopkins University.

Of interest was the initiation of a cooperative study with Dr. U. S. Seal, of the Veterans Hospital in Minneapolis, on contraceptive techniques in lions and other cats. Dr. Gray and Dr. Bush have participated in this project, most of the work being done at the Lion Country Safari at Doswell, Virginia. The study will continue for the next several years.

A veterinary intern position was established. This will be a fifteen-month appointment with the purpose of giving practical clinical experience to young veterinarian graduates wishing to specialize in exotic animal medicine. Dr. P. K. Ensley has been appointed to fill the first internship.

The program of seminars, as described in last year's annual report, continues with growing success and participation by veterinarians associated with exotic animal medicine in the eastern region of the United States.

Probably the most noteworthy activity for the Office of Animal Health and Pathology occurred this late spring and early summer when there was a sudden outbreak of duck viral enteritis in the waterfowl ponds. An early diagnosis was made in cooperation with the Wildlife Disease Laboratories of the United States Department of Interior. Through the cooperation and assistance of the United States Department of Agriculture and the Cornell School of Veterinary Medicine, vaccine was obtained and promptly administered. The outbreak was held to a loss of some forty birds. There has been no recurrence since the waterfowl collection was completely vaccinated. It is perhaps too soon to feel that all danger is over;

however, it does appear that this disease has been brought under control by the alert veterinary staff, the early diagnosis, and the preventative vaccination of the entire collection.

VISITOR SERVICES

The recently created Office of Education and Information is building into the Zoo's visitor programs new dimensions in visitor learning and is guiding the Friends of the National Zoo in their active volunteer guide and docent program.

The Office of Graphics and Exhibits undertook a wide-ranging program, highlighted by developing a new standard identification label and the counseling of designers on the new graphics master plan for the Zoo. This plan will go into production in 1976 with a unique trail system for visitors.

In the Office of Protective Services a new health and safety unit was formed to focus on Zoo needs for improved visitor and employee safety. New leadership of the police unit has emphasized officer training and service to visitors.

In the central support group, the Office of Facilities Management continued to advance the skill levels of employees. A helpers' training program was put into effect under capable management, giving unskilled employees an opportunity to progress in mechanical abilities, thereby enabling them to compete for positions as skilled tradesmen in the future. Maintenance programs were expanded, with the custodial force assuming responsibility for cleaning the public areas in the animal exhibit buildings; this action released the keepers for attention to the collections. Great credit must be given to the skill and devotion of the excellent trade and craft employees, who maintained the Zoo in an orderly fashion despite the disruption caused by the construction program.

ADMINISTRATION

At the core of the Zoo's administrative operation is a small but highly effective management services unit. The main emphasis of this office is to help develop administrative control and understanding within each Zoo office by assisting with good central information and guidance. There was an overall step-up in staff education efforts with more than a threefold increase in employee participation in training over fiscal year 1973. During the year, 118 em-

ployees accomplished 191 educational improvement experiences. Major emphasis is being made to increase knowledge and skill by wider participation in this educational program through all areas of the Zoo. Such noteworthy successes in management, throughout the Zoo, left the Office of the Director free to concentrate on the broader problems of guidance and overall management.

As noted earlier in this report, construction was visually dominant within the Zoo in fiscal year 1975. Plans are proceeding for construction next year in the peripheral areas of the Zoo and the eventual complete modernization of the entire Zoo. Despite the turmoil, 1975 has been a busy and exciting year with many notable advances. The Zoo is anticipating a Bicentennial year that is meaningful and educational for all its visitors.

Office of International Programs

The Office of International Programs provides support to United States institutions of research and higher learning, including the Smithsonian, through Foreign Currency Program grants; provides for the rapid communication of data on natural and environmental phenomena of short duration through the Center for Short-Lived Phenomena; provides assistance to Peace Corps environmental and natural resources programs; and provides liaison services and assistance in foreign affairs for other offices of the Smithsonian.

SMITHSONIAN FOREIGN CURRENCY PROGRAM

The Smithsonian Foreign Currency Program (SFCP) awards grants to support the basic research interests of American institutions, including the Smithsonian, in those countries where the United States holds blocked currencies derived largely from past sales of surplus agricultural commodities under Public Law 480. The Program is active in countries where the Treasury Department deems United States holdings of these currencies to be in excess of normal federal requirements, including at present India, Pakistan, Egypt, Tunisia, and Poland. The Smithsonian received a fiscal year 1975 appropriation of \$2 million in "excess" currencies which was used to grant support to over seventy-five projects in the disciplines of

archeology and the anthropological sciences, systematic and environmental biology, astrophysics and earth sciences, and museum-related fields. Since its inception in fiscal year 1966, the SFCP has awarded more than \$26 million in foreign currency grants to some eighty-seven institutions in thirty-two states and the District of Columbia. Within the framework of the program, the Smithsonian this year made a second contribution of \$1 million in support of international efforts to save the submerged temples at Philae, Egypt. The SFCP participated in interagency negotiations leading to the establishment of a United States-Polish Joint Board to fund scientific and technical cooperation. This Joint Board, similar in purpose to the United States-Yugoslav Joint Board, makes it possible to extend the period for which Polish funds will be available for research under the SFCP.

INTERNATIONAL LIAISON SECTION

The International Liaison Section (ILS) provides liaison and assistance to individuals and units of the Smithsonian in dealing with the Department of State and with foreign governments. It handles international matters involving travel and research abroad, and foreign participation in domestic programs of the Smithsonian. ILS provides passport and visa services for Smithsonian staff, and assists in research arrangements for foreign visitors. ILS has been working closely with the Division of Performing Arts in arranging Bicentennial-related foreign participation in the Festival of American Folklife, and has been involved with foreign participation in other special Bicentennial activities of the Institution.

CENTER FOR SHORT-LIVED PHENOMENA

The Center operates a worldwide electronic alert system for rapid communication of scientific data on phenomena of short duration involving significant changes in biological, ecological, and geophysical systems, including rare or unusual animal migrations, population changes, major floods, forest fires, volcanic eruptions, earthquakes, landslides; pollution events such as oil and chemical spills, gas and radioactive substance leaks; and occasional astrophysical events such as meteorite falls and fireballs. During the year, the Center reported 235 short-lived events that occurred in forty-five countries, islands, and ocean areas. Scientific field teams

investigated 160 of the events. The reporting network consists of 2874 scientists, scientific research institutions, and field stations in 185 countries, and is augmented by an International Environmental Alert Network of 60,000 secondary school and university students in 691 schools in the United States and twenty-three other countries.

PEACE CORPS ENVIRONMENTAL PROGRAM

The Smithsonian-Peace Corps Environmental Program provides assistance in two general areas. It develops Peace Corps projects and assignments dealing with environmental and natural resource problems in the developing countries, and it recruits and places applicants skilled in the environmental biological sciences. Over 800 applications were received in fiscal 1975, and 203 volunteers with environmental skills were assigned to twenty-six countries. Within the framework of Peace Corps agreements, host governments assigned these environmental sciences volunteers to scientific and natural resource conservation programs.

Radiation Biology Laboratory

Sunlight is important for the maintenance of life on the earth. The energy from sunlight is used by biological systems in two principal ways: either the energy is converted to food, or the energy is used to regulate growth and development.

In order for the sunlight to be used in these two ways it must be absorbed by pigments. A large portion of the laboratory research this year has been directed toward research on plant pigments involved in these processes.

Specifically, the laboratory has continued its investigations in: (a) regulatory processes of plants, such as membrane synthesis and pigment synthesis; (b) environmental processes and energy flow in biological systems, such as photosynthesis and phosphorus metabolism; (c) the measurement of the amount, duration and color quality of sunlight present in the environment; and (d) the age estimation of biological artifacts based upon their radioactive carbon content.

REGULATORY BIOLOGY

As they evolved, aerobic photosynthetic organisms adapted to the environment in various ways. In order to harvest a maximum amount of light from the sun, many organisms evolved pigments in addition to the principal photosynthetic pigment, chlorophyll *a*. These additional pigments absorb sunlight in regions in which there is only partial absorption by chlorophyll *a*. Thus, these accessory pigments extend the range of light available for growth and confer a survival advantage upon the organisms where they are present.

In the red and blue-green algae, for example, these accessory pigments are packaged in structures known as phycobilisomes. The phycobilisomes are light-harvesting aggregates of protein pigments and are arranged on membranes in such a fashion that energy caught by them from sunlight is transferred to chlorophyll for photosynthesis.

These phycobilisomes can be seen in electron micrographs of red and blue-green algae, and methods for isolating and purifying them have been developed in our laboratory. Analyses of the purified phycobilisomes have been made by electron microscopy, immunochemistry, fluorescence and absorption spectra, and selective dissociation in various ionic strength buffers over a wide range of pH. These measurements led to a detailed structural model for light-harvesting antennae in the red alga, *Porphyridium cruentum*.

It was found that the physical dissociation, i.e., the sequential release, of the phycobiliprotein pigments corresponded directly with the decreased activity of the aggregate in energy transfer. The phycobilisome, in confirmation of the previously proposed model, is structured for maximum light energy absorption and unidirectional transfer of this energy to the chlorophyll, where it is utilized for photosynthesis.

The pathway discovered is a transfer of energy from the shorter wavelengths of sunlight toward the long wavelength absorption maximum of chlorophyll *a* in the following sequence: phycoerythrin to R-phycocyanin to allophycocyanin to chlorophyll *a*, which is attached to the photosynthetic membranes of the algae.

The biosynthesis of the photosynthetic membranes of chloroplasts is also being studied, using a polyribosome-membrane complex isolated from the green alga *Chlamydomonas reinhardtii*. A principal component of biological membranes is protein. Proteins

are synthesized on ribosomes, some of which are tightly attached to the photosynthetic membranes. These membrane-bound ribosomes contain incomplete proteins, that is, proteins in the process of being made. If synthesis of these incomplete proteins is artificially terminated, for example, by inhibitors, the prematurely completed protein chains remain with the membrane and not with the ribosomes as might be expected. This observation has led us to conclude that ribosomes attached to the photosynthetic membranes make membrane proteins that become part of the membrane as the proteins are made. This system probably is part of the process by which the total amount of photosynthetic membrane is increased. It may also apply to the formation of other biological membranes.

Another pigment system investigated this year is the carotenoids. Carotenoids are found in all families of both plants and animals. For example, they are responsible for the yellow-orange, and red colors of carrots, tomatoes, leaves in autumn, starfish, flamingos and other birds. We have been investigating the biosynthesis of carotenoids in an orange bread mold, *Neurospora crassa*. This organism has the interesting property of requiring blue light to initiate synthesis. At least eight different carotenoids are produced after the light treatment.

Considering the temperature requirements and the effects of various inhibitor compounds, we have proposed that an inducer used to activate a gene is produced by the light reaction. The genetic code contained in the activated gene is used to specify the amino acid sequence of an enzyme required for carotenoid synthesis. The hypothesis was proposed that this enzyme is absent in dark-grown cultures. However, the interesting possibility remains that a whole series of genes is activated by light, and, as a result, more than one enzyme is produced.

Two approaches are being used to test this hypothetical model: genetic and biochemical. The genetic study involves the use of ultraviolet light to mutate wild type *Neurospora*. Using this mutagen, we have obtained four different types of strains. These are albinos that do not make pigment even in the presence of light, yellow-orange mutants that synthesize a different distribution of pigments, mutants in which the sensitivity of carotenoid synthesis to temperatures above 6C has been reduced, and mutants that can make pigment in the dark. We are in the process of determining the

location of these mutants on the seven chromosomes of *Neurospora*.

From a biological standpoint, phytoene, a colorless compound which accumulates in dark-grown *Neurospora*, is a likely precursor of the carotenoid pigments. Since phytoene can be synthesized by *Neurospora* in the dark, it is predicted that light induces the synthesis of enzymes for the conversion of phytoene to the carotenoids. Furthermore, one might predict that the level of enzymes involved in phytoene synthesis itself would be unaffected by a light treatment. However, preliminary results using radioactive precursors of phytoene indicate that a blue light exposure of two minutes does induce *in vivo* the *de novo* synthesis of one or more of the enzymes involved in phytoene synthesis. Thus, blue light may affect both the synthesis of phytoene, as well as the synthesis of carotenoids from phytoene.

The single-celled fungus, *Phycomyces blakesleeanus*, demonstrates a phenomenon known as light-dark adaptation. That is, it has the ability to change its sensitivity to light stimuli, depending upon the previous history of light exposure it has received. The nature of the pigment receiving the light stimuli in the cells is as yet unknown. However, by measuring the bending responses of these cells to unilateral light stimuli of varying irradiance (intensity), it is possible to measure the time constants of the dark-adaptation rate after very high intensity blue light exposures ($> 1\text{mW}\cdot\text{cm}^{-2}$).

Experimentally, it is found that the cell can adapt to a new, lower intensity at the rate of a factor 2 in intensity about each four minutes, in agreement with previous data from light-growth response measurements. Surprisingly, it has also been found that in the range of intensities so large that no responses can be observed physiologically, such as bending or light-growth responses, the adaptation mechanism still functions. This was demonstrated by adapting the cell to intensities many fold higher than it can respond to and then measuring the time it takes for the cell to become sensitive to a standard lower intensity in the responsive range. Even for intensities not effective in producing responses, the cell has a method for evaluating the intensity. We conclude that these data indicate that a photobleaching of the pigment itself is occurring, which is used by the cell for intensity measurement, and

that the sensitivity changes of the cell in light-dark adaptation are not simply due to limitations in the capacity of responding systems.

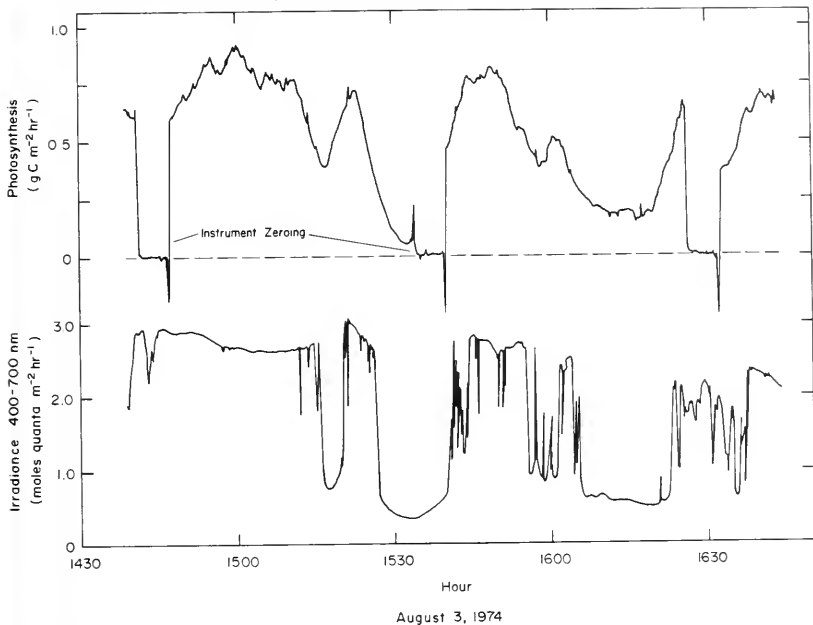
ENVIRONMENTAL BIOLOGY

From a photosynthetic standpoint salt marshes are thought to be among the world's most productive plant communities. It is also thought that this productivity (excess carbon matter after necessary growth and maintenance) is exported from the marsh to be utilized by consumers living in the estuary subtended by the marsh. One of our objectives has been to understand the capacity of the marsh to utilize light. We have studied carbon dioxide assimilation in the light and dark in sections of salt marsh communities that were enclosed in a plexiglass chamber of approximately one cubic meter. A system for monitoring the *in situ* rate of CO₂ exchange which utilizes an infra-red gas analysis system has been constructed in the marsh. During the night, metabolism of organisms in the community evolves CO₂, but when there is sufficient light, the green plants and algae on the surface of the marsh assimilate CO₂ at a rate that exceeds CO₂ evolution and is dependent on light intensity. Figure 1 shows results of measurements of net CO₂ exchange in the light over a two-hour period in a community that includes approximately 60 percent of one species, a sedge *Scripus olneyi*, and approximately 40 percent of a mixture of the two grasses *Spartina patens* and *Distichlis spicata*.

Analysis of many such records (Fig. 2) has shown that the community light saturation for net CO₂ exchange occurs near four moles of quanta m⁻² h⁻¹ (about 5/7 of full sunlight intensity), suggesting that the community is adapted to utilize rather high light intensity. Efficiency of the light utilization (the ratio of energy received to energy stored in carbon compounds) is about 60 percent of that of agricultural crops, such as corn and potatoes, and this adds to the earlier evidence that salt marshes are highly productive and, therefore, valuable natural resources.

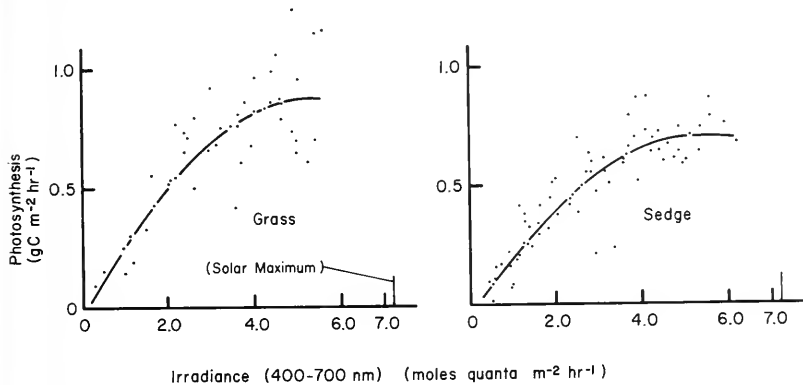
Plants have also evolved special mechanisms to enable them to survive harsh environments of temperature extremes. During the past year, studies of the effects of chilling on the photosynthetic apparatus of leaf cells were continued. It has been found that it is possible to isolate from whole leaves cells which, by two criteria, are able to carry on photosynthesis independently of the leaf struc-

Community type Sedge (*Scirpus olneyi*, *Spartina patens*, *Distichlis spicata*)



August 3, 1974

Irradiance of photosynthetically active radiation (400-700 nm) and photosynthetic uptake of CO₂ in a section of a sedge community contained within a plexiglass chamber on the Rhode River, Maryland. The photosynthesis record is interrupted periodically to establish an instrument baseline. The instrument measuring irradiance responds in a few milliseconds but the system for measuring net photosynthesis requires several minutes to respond.



The dependence of net photosynthesis in two salt marsh communities in the Rhode River, Maryland, upon irradiance of photosynthetically active radiation during August 1974. The maximum solar irradiance during this time of year is 7.2 moles quanta m⁻² hr⁻¹. The grass community is a mixture of *Spartina patens* and *Distichlis spicata*, and the sedge community is approximately 40 percent of this grass mixture and 60 percent of the sedge *Scirpus olneyi*.

ture. They evolve oxygen and assimilate CO_2 in the light in the absence of artificial electron donors or acceptors. The conditions for obtaining such a preparation of cells are that a high molecular weight compound, polyvinylpyrrolidone (40,000), be included in the initial medium in which the leaves are bathed during the brief (35 sec) grinding, and that the pH be controlled by a buffer (at 7.0 ± 0.2 pH units). Whole and broken cells are separated by mild centrifugation. Using this method to obtain active cells from whole leaves that have been exposed to a succession of cool (5°C) nights, we were able to show that the reduction in oxygen evolution occurs at the same time and to the same extent as does the loss in capacity for carbon dioxide assimilation in whole leaves. Rates of oxygen evolution with this cell system are of the order of 25 percent of those for carbon dioxide assimilation in whole leaves. It has been suggested by some workers that the plant hormone abscisic acid (ABA), which is known to effect photosynthetic CO_2 assimilation by closing the stomata of leaves, may also have a direct effect on the photosynthetic apparatus within the leaf. However, we could find no immediate effect of abscisic acid on oxygen evolution in whole green cells separated from the leaf by our methods.

As part of the studies investigating the flow of energy in the Bay area, the relationship is being investigated between land use practices on lands in Maryland adjacent to the Chesapeake Bay and the composition of the runoff waters flowing from these lands into the estuary. The water discharge rates and volume-integrated concentrations of nutrients (nitrogen, phosphorus, and organic carbon) were monitored for a year on five watersheds. The watersheds were mapped in detail with respect to land use, and the nutrient data were analyzed to give mean seasonal area yield loading rates for each of five land use categories (cultivated cropland, pastureland, forest, swamps and freshwater marshes, and residential). Rainfall was also monitored for amount and nutrient composition. It was found to contain high levels of both nitrate and organic nitrogen. A quantitative analysis was computed of the sources of organic matter, nitrogen, and phosphorus in the Rhode River, a subestuary of Chesapeake Bay. Rainfall and the exchange of water masses with Chesapeake Bay proper were found to be the principal sources of nitrogen, while residential areas and cultivated cropland were the largest sources of phosphorus. In the case of organic matter,

less than one percent was derived from the watersheds and airshed, and the greatest source was primary production by phytoplankton in the estuary.

Studies were also conducted of phosphate uptake by bacteria and phytoplankton in the Rhode River. Uptake was closely correlated with cell biomass, but bacterial uptake rates were between 10^4 and 10^5 times higher per biomass. Thus, although bacterial biomass was usually much lower than phytoplankton biomass, bacteria usually accounted for over 90 percent of total planktonic phosphorus uptake.

Phosphorus compounds which are biologically important are polymers of phosphate commonly called polyphosphates. In the laboratory these polyphosphates have been isolated from synchronously dividing *Chlorella* cells. Two classes of polymer have been characterized. The first, α , is formed in large amounts during the cell expansion phase of the cell cycle and then decreases rapidly in amount. The second, β , increases when α decreases. Radioisotope labeling studies have shown that α is labeled twice as fast initially, but both become labeled with the same specific activity as the medium within two cells' cycles.

Neither class of polymer is homogeneous with respect to molecular weight, but α has a molecular weight range of 50,000–125,000, while β has a range of 5000–25,000. A true polyphosphate is inert to alkaline hydrolysis, but both α and β give the same size product upon alkaline hydrolysis, a smaller more homogeneous polymer of about 5000 daltons. Both α and β release about 80–85 percent of their phosphorus as orthophosphate upon mild acid hydrolysis under conditions which give 100 percent orthophosphate from true polyphosphates. The molecular structures of α and β , as well as their degradation products, are unknown but are currently under investigation.

SOLAR ENERGY

One of the pigments which controls a wide range of diverse biological responses from flowering to seed germination is phytochrome. Phytochrome is a photochromic pigment which can exist in two major absorbing forms (wavelength maxima in the red or in the far red regions of the spectrum). It is believed that many seasonal phenomena in plants are regulated through this pigment. If

only the far red form is physiologically active, then plants having this pigment would be sensitive to subtle changes in the naturally occurring amounts of red and far red light from sunlight.

We know from laboratory experiments that changes in red and far red do cause marked developmental responses when all other conditions of the environment are maintained constant. Therefore, measurements of sun and sky light have been made, and the ratio of the amounts of red and far red light occurring naturally determined. The data from the monitoring stations for the years 1968 to 1973 have been published in tabular form showing the amount of energy in each spectral region, as well as the percentage of the total energy.

Ozone is a naturally occurring trace gas of the earth's atmospheric envelope. It is concentrated primarily in the stratosphere between fifteen and thirty-five kilometers altitude. Ozone is also formed near the earth's surface from man-made and naturally occurring sources. Ozone concentration in the stratosphere varies with latitude from about 2.4 mm at standard temperature and pressure (STP) at the equator to about 4.5 mm at high latitudes. There are also seasonal and geographical variations. This layer of ozone is the principal absorber of ultraviolet radiation from the sun for wavelengths of 320 nm down to about 225 nm and serves as a shield for terrestrial organisms.

In view of the recent concerns about ozone and ultraviolet radiation and the admitted uncertainties that now exist, the Radiation Biology Laboratory has developed and recently installed at several monitoring sites ultraviolet measuring instruments to measure energy in narrow bands from 280 nm to 320 nm.

In the skin of mammals there are a number of pigments present. One of these, as yet not clearly identified, is involved with the reddening of skin (erythema response) and is associated in some way with the induction of skin cancer. Previously, the short wavelength limit of ultraviolet light, reaching the earth, which produces these responses was thought to be about 290 nm. During the past year, we have detected energy below 290 nm at the surface of the earth on a relatively consistent basis, using the RBL radiometer.

CARBON DATING

All living organisms are in equilibrium with atmospheric carbon dioxide until death, when radioactive ¹⁴Carbon begins to decay. By

measuring present ^{14}C activity in dead biological specimens, it is possible to determine the age, or time of death, of those organisms, and thus provide chronologies necessary for the researches of archeologists, geologists, palynologists, etc. A small portion of the research time of the Carbon Dating Laboratory is devoted to basic research of the method itself, such as the development of chemical pretreatments to extract the most representative and reliable fractions of sample materials. Major efforts, however, are devoted to providing chronologies for the research staff of the Smithsonian Institution, to the investigation of the relationships between environmental change and cultural change, and to the problem of the early occupations of the Americas.

In collaboration with the Smithsonian Institution staff, as well as cooperative research with some twenty other institutions and universities, the laboratory has been engaged in such studies as late-glacial and post-glacial sea-level rise along the Middle Atlantic coast, cultural change in response to environmental change along the New England and Labrador coasts, and the early occupations of coastal Labrador some 8000 years ago.

Recent discovery of sea current reversal at the Strait of Gibraltar about 10,000 years ago conjures up visions of drastic environmental and cultural changes within the Mediterranean Basin, and studies are continuing to determine the extent of such changes throughout the basin. To the south, the dating of ancient lake levels at Alexandersfontein near Kimberley, South Africa, has led to the study of climatic changes in that area and their possible correlation with Middle and Late Stone Age occupations around the lake.

A cooperative sampling program by United States and Union of Soviet Socialist Republics scientists has involved the laboratory in a joint dating effort with Russian laboratories in the investigation of late-glacial and post-glacial climates of east-central Siberia. A joint U.S.S.R.-U.S. expedition provided the laboratory with samples confirming a continuous occupation of the Aleutian chain beginning some 8000 years ago, and the dating of materials from several sites in southeastern Alaska indicates initial occupations there by 10,000 years ago.

The most striking project recently undertaken is the dating of materials from the Meadowcroft Rockshelter in western Pennsylvania. Several samples from hearths in the lowest occupation levels of the site indicate that man was already in northeastern North

America by 16,000 years ago. Since the most recent, and generally accepted, entry to North America by way of the Bering land bridge could have taken place only between 14,000 and 17,000 years ago when land was exposed there, the ^{14}C dates from Meadowcroft suggest that man's entry must date to the prior land bridge, some 25,000 to 30,000 years ago. Archeologists are now quickly revising their estimates of man's antiquity in the New World as a result of this project.

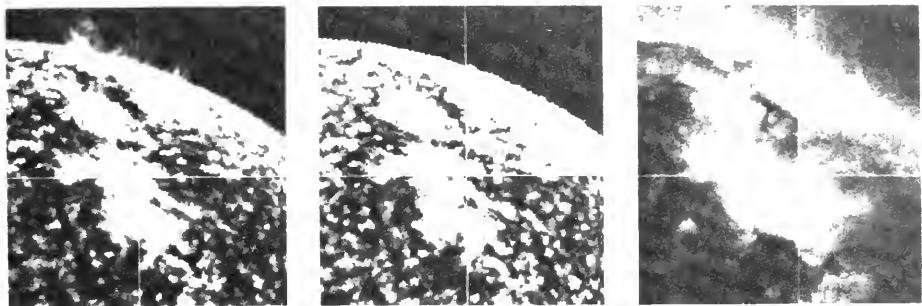
Smithsonian Astrophysical Observatory

Since 1973, the related research activities of the Smithsonian Astrophysical Observatory (SAO) and the Harvard College Observatory (HCO) have been coordinated under a single director. This cooperative venture, combining the facilities of both observatories in a Center for Astrophysics at Cambridge, Massachusetts, has as its primary goal "the conduct of excellent astrophysical research in a variety of interdependent subfields."

Recognizing the limitation to the amount of resources currently available as well as to the potential growth in these resources, a plan has been drawn up, covering the next five years, for utilizing the available resources effectively in attaining scientific goals and objectives. In brief, this plan calls for specific steps to strengthen the research in each division, by provision of new staff and resources, as well as by phasing out programs which are of less scientific interest or could not contribute directly to the overall goal. They also call for greater effectiveness in the administrative operation of the observatories.

During 1974, major new research appointments were made in high-energy astrophysics, theoretical astrophysics, planetary sciences, and solar physics. New programs were started in x-ray astronomy. A major objective for the next few years is the provision of institutional funds to undergird these new programs and other ongoing programs deemed to be excellent.

Certain scientific programs have been instituted at the Center, including a Visiting Scientist program and a Center Postdoctoral Fellowship program. Under the latter program, six fellows were



Three views of the solar surface as seen in different wavelengths by the Extreme Ultraviolet Spectroheliometer on the Apollo Telescope Mount aboard the Skylab. A team of Harvard and Smithsonian scientists are now analyzing data from this experiment to understand the physical processes at work in the solar body. Photo: Harvard College Observatory.

The Skylab 3 Satellite photographed from the command module prior to docking. Harvard experiments aboard the Apollo Telescope Mount (located just above the main docking port) have provided data for research on solar processes now underway by Harvard and Smithsonian scientists at the Center for Astrophysics. Photo: National Aeronautics and Space Administration.



appointed in July 1974 for a two-year period, to pursue research of their choosing. It is expected that four more fellows will be appointed in July 1975, with interests in radio astronomy, solar physics, and theoretical astrophysics.

More detailed discussion of the current research objectives of each of the Center's eight divisions follows.

ATOMIC AND MOLECULAR PHYSICS

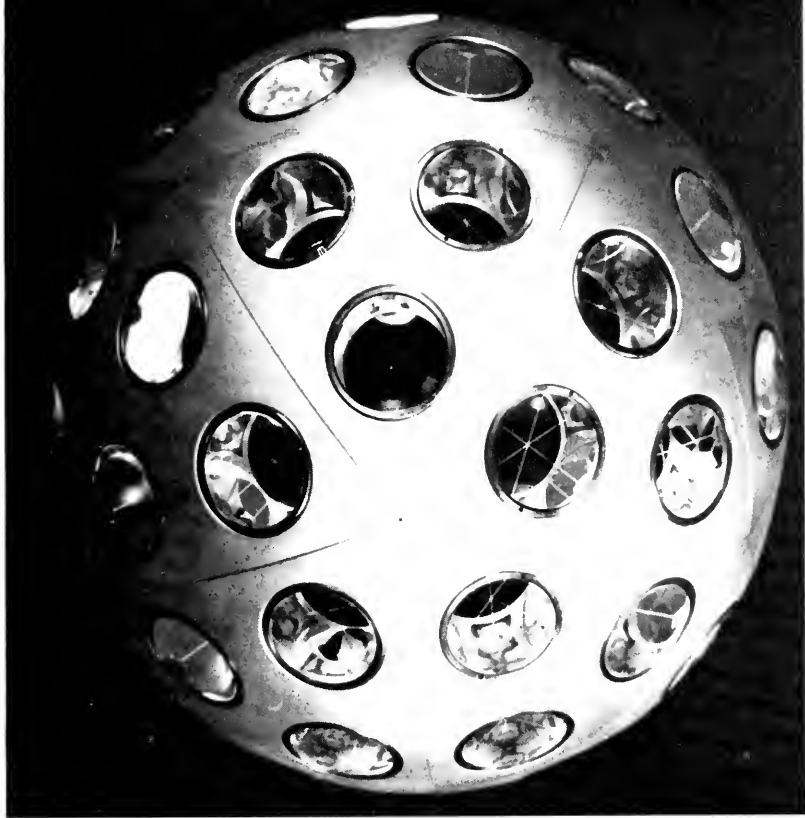
This division embraces the spectroscopy laboratory at HCO and the theoretical atomic physics group, largely at SAO. Experimental work includes the measurement of photoionization cross sections and oscillator strengths for species of astrophysical interest. Theoretical work covers the calculation of atomic and molecular structure and the associated cross sections for interaction with radiation, using such techniques as model-potential methods. The resulting data are being used in studies of processes in the upper atmosphere and in interstellar clouds.

Future directions include the development of an ion-beam apparatus to measure the interaction of multiply-charged ions with electrons and radiation; currently supported by SAO.

GEOASTRONOMY

This division utilizes a worldwide network of tracking stations to observe precise positions of artificial satellites (using optical telescopes and laser ranging) and employs the resulting data to extract information about the earth's shape and gravitational field. Previous results have been summarized in a publication called "The Smithsonian Standard Earth."

The French STARLETTE satellite, placed in orbit in March 1975, and the GEOS-C satellite, launched in April 1975, are being tracked now; it is planned to analyze radar altimeter data from the latter satellite to determine the ocean geoid. LAGEOS, a satellite conceived by the group, is expected to be launched in February 1976. Using laser ranging to its corner reflectors, it is hoped that 2-cm range accuracy can be achieved. The resulting data will be used, as part of NASA's Earth and Ocean Physics Application Program (EOPAP), to deduce basic information about the earth, including the direct measurement of continental drift. Emphasis will be placed on dynamics of the earth, including plate tectonics and the response to loading by tides and glaciation.



STARLETTE, a satellite designed specifically for research in geodesy and geodynamics and launched in February 1975, is currently being tracked by the worldwide laser and camera network operated by the Smithsonian Astrophysical Observatory. STARLETTE is a solid sphere with an extremely low area-to-mass ratio which minimizes all non-gravitational effects on its orbit. Extremely precise ranging from ground stations is facilitated by the complex laser array on the satellite. The resultant orbital data should allow study of long-period perturbations of gravitational origin as well as provide precise positional determination of the ground stations for tectonic purposes. Photo: CNES/GRGS, France.

Another project in this division is to fly an extremely precise hydrogen maser clock in a high-altitude rocket probe to check Einstein's prediction that such a clock will "tick" faster than an identical clock on the earth. This prediction, fundamental to the theory of relativity, has so far been verified at the 1 percent level; this experiment should be one hundred times more accurate.

Finally, the division is conducting an experiment aboard the joint USA-USSR Apollo-Soyuz Test Project scheduled for launch in July 1975. One of the very few experiments selected for this flight, it will permit accurate determination of gravitational anomalies by extremely precise monitoring of the distances between the United States and Soviet spacecraft.

Future directions include a long-term commitment to the EOPAP program, and further work aimed at increasing the stability of hydrogen maser clocks beyond the current 10^{-15} level with a number of possible applications in astronomy.

The twenty-year Moonwatch program involving an international network of volunteer visual satellite observers was disbanded at the end of June 1975. Since the first observations of Sputnik I in 1957, the network has made approximately 400,000 observations of artificial satellites in support of the federal space program.

HIGH-ENERGY ASTROPHYSICS

In 1967, SAO started a small group working with a novel Cerenkov detector at Mt. Hopkins Observatory to detect gamma rays of 10^{11} – 10^{12} eV from celestial sources. This project succeeded in detecting gamma rays from the Crab pulsar, placing severe constraints on theoretical models. More recently, the group has used equipment in Australia to demonstrate that the Centaurus-A radio source (NGC 5128) also emits high-energy gamma rays.

In 1973, a major new program of x-ray astronomy, using rocket- and satellite-borne detectors, was added at SAO. This group is analyzing the data acquired by the UHURU x-ray instrument. Many stellar x-ray sources have been discovered, which appear to be associated with collapsed stars orbiting normal stellar companions. Black holes are predicted by Einstein's theory of relativity, but they had never been observed before.

Extragalactic sources were also found, including many clusters of galaxies. The source of x-rays in clusters appears to be extremely hot gas, whose origin and heating may be connected with basic processes in cosmology.

Current projects include rocket flights and participation in experiments aboard the Astronomical Netherlands Satellite, launched in August 1974. Observations of increased x-ray activity in the object Cygnus X-1 between May 1 and May 5 by the Smithsonian experiment aboard that satellite sparked a series of ground-based searches leading to the detection of increased radio emissions by astronomers at the National Radio Astronomy Observatory (NRAO). The corresponding activity in two wavelengths confirms observations of dual intensity changes from Cygnus X-1 first seen four years earlier, thus supporting the contention that the object is a

black hole and suggesting physical mechanisms unique to such stellar systems.

Investigators at the Center are also involved in the experiments aboard *SAS-C* an x-ray observatory launched in May 1975. A laboratory facility for the design and calibration of x-ray detectors and telescopes is being built at the Center.

Future plans heavily emphasize participation in a program of High-Energy Astronomy Observatories (HEAO), with major effort going into the design of a large x-ray telescope on HEAO-B, which will have a resolution better than two arcseconds. This experiment will be launched in 1978. Instruments to be placed at the focus of this telescope are being designed by various groups around the country, including the one at the Center.

OPTICAL AND INFRARED ASTRONOMY

In addition to using Harvard's 61-inch reflector at Agassiz Station and Smithsonian's 60-inch reflector at Mt. Hopkins, observational astronomers in this group enjoy guest privileges at a number of observatories in the United States and abroad. They also use a 40-inch balloon-borne telescope developed jointly by HCO, SAO, and the University of Arizona for observations in the far infrared. This division utilizing numerous facilities has made observations of comets and asteroids, planets, stars, x-ray sources, nebulae, interstellar clouds, pulsars, quasars, and galaxies. Some recent highlights include the study of halos of spiral galaxies at one-micron wavelength, discovery of high winds in the atmosphere of Venus, high-resolution mapping of the Orion nebula in the far infrared, a demonstration that the brightest x-ray source in the sky (Sco X-1) exhibits regular light variations with a period of approximately nineteen hours, and the discovery that for a brief period the quasar 3C 279 exceeded the luminosity of 100 trillion suns.

The future activities of this division are heavily oriented toward the completion of the Multiple-Mirror Telescope, which is being constructed jointly by SAO and the University of Arizona on Mt. Hopkins. A telescope of novel design based on altitude-azimuth mounting of six lightweight 72-inch mirrors, the MMT will have an equivalent aperture of 175 inches, and an optical resolution better than 0.7 arcsecond; it will be optimized for operation in the infrared. The MMT is scheduled to draw first light in 1976; some of the

major components are already complete and await assembly, while others are in various stages of construction. However, full-scale operation will not take place until 1977. A high priority for this project is its successful observation of faint optical and infrared objects, especially extragalactic ones.

PLANETARY SCIENCES

In this division observations of the smaller bodies in the solar system—comets, meteors, asteroids, and satellites—are emphasized, as are studies of meteoritic and lunar material. Theoretical work centers on the origin of the solar system and of various bodies within it. Recent studies include a campaign to study stellar occultations by Eros, which led to new estimates of the size and shape of that asteroid. Mutual occultations of the satellites of Jupiter are leading to better estimates of their sizes. Theoretical work indicates that the obliquity of the earth may increase dramatically in the future, and that the presence of resonance gaps in Saturn's rings implies that the particles making up the rings must be of the order of ten meters across.

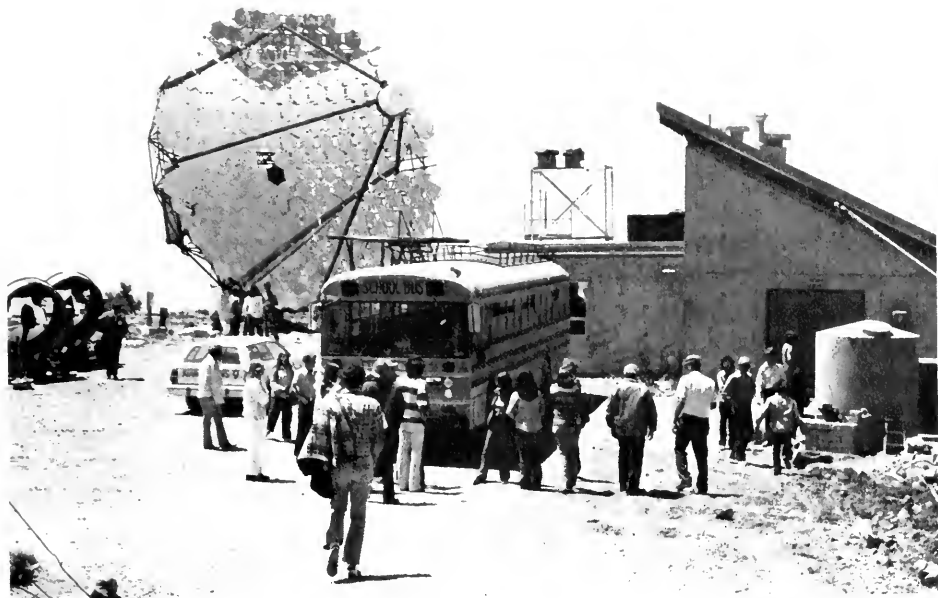
Several research programs involving lunar and meteorite samples are continuing, including mineralogical and petrological studies on a complex breccia boulder from the Apollo 17 site and on particles from the Allende carbonaceous chondrite, as well as isotopic investigation of lunar material. In a related program, inexpensive detectors to determine the neutrino fluxes from various cosmic sources have been developed. The Prairie Network, a ten-year project to photograph fireballs, is being discontinued.

Future directions will probably emphasize further the origin of the solar system, including cosmochemistry and theoretical analysis.

In spring 1975, a new asteroid discovered by two members of this division using the telescope at Agassiz Station was named "Whipple" in honor of the former director of SAO, Dr. Fred L. Whipple.

RADIO ASTRONOMY

This group is comprised of both HCO and SAO scientists. The Center's efforts include the Harvard Radio Astronomy Station at Ft. Davis, Texas, where studies of extragalactic radio sources and of solar radio bursts are made. Center scientists are also heavily

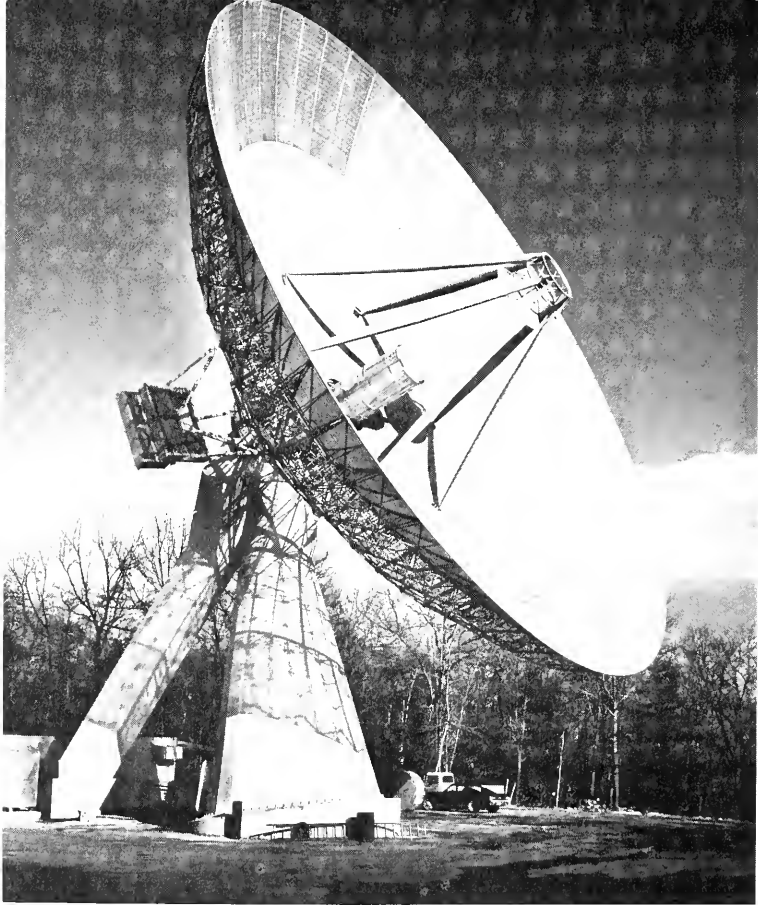


Several hundred Southern Arizona astronomy buffs take advantage of the annual Mount Hopkins Observatory Open Days each year to visit the varied facilities at the 7600-foot level of the mountain site, including the large 10-meter gamma-ray detector shown above. Photo: Smithsonian Astrophysical Observatory.

involved in studies of the interstellar medium and maser sources at microwave and millimeter wavelengths. Observational facilities at Agassiz, Haystack, NRAO, and the Texas Millimeter Wave Observatory are used in this work.

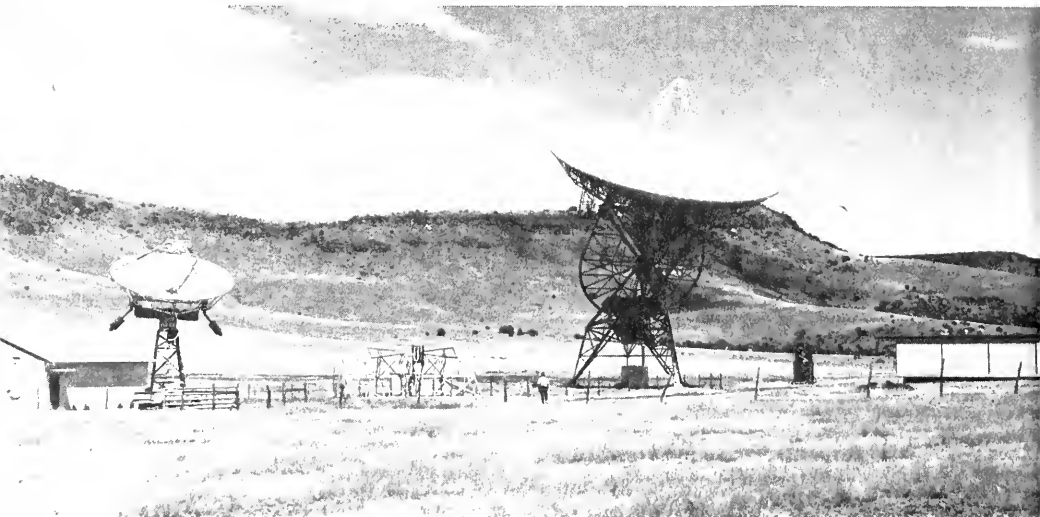
Recent studies include the detection of ethanol (grain alcohol) in interstellar clouds and CH in Comet Kohoutek. Isotopic abundances were studied in the Orion nebula, and heavy ions were identified in the recombination-line spectrum of H I clouds. Evidence has been presented both from VLBI and single-dish measurements that milli-gauss magnetic fields exist in Orion. If confirmed, this would imply energy densities a million times greater than in the typical interstellar medium, suggesting interesting new effects.

A new program has been initiated in response to the recent finding that chlorinated hydrocarbons released into the atmosphere may, via a series of photochemical reactions, attack the ozone in the earth's upper atmosphere, with potential dire consequences for living things. Experiments in Texas have demonstrated the feasibility of detecting some of the key molecules in the stratosphere by their millimeter lines.



The 84-foot dish used at Agassiz Station, Massachusetts, in the joint Harvard-Smithsonian program of radio astronomy. Photo: Harvard College Observatory.

The Fort Davis (Texas) Radio Astronomy Station, with 28-foot and 85-foot antennas, operated by the Harvard College Observatory as part of the joint Harvard-Smithsonian program of research in radio astronomy. Photo: Harvard College Observatory.



Emphasis in future research will be placed on short millimeter and submillimeter wavelengths, where good work can be done at a more moderate cost. This spectral range is rich in molecular features of prime interest to various groups at the Center.

SOLAR AND STELLAR PHYSICS

This division comprises the HCO Solar Satellite Project, an HCO solar x-ray group, and a variety of studies, many of them theoretical, at SAO. The Solar Satellite Project is deeply involved in the analysis of the large amounts of solar ultraviolet data gathered on Skylab. All the evidence points to strong magnetic control of the chromosphere and corona, evidenced by prominent arch structures and bright points. Recent work has developed evidence for wave propagation from lower to upper layers; if expectations are fulfilled, the long-sought heating mechanism for the corona will be found.

Starting in 1974, the ultraviolet data at the Center have been complemented by x-ray observations from the same spacecraft obtained by a group that joined HCO last year. Among the more striking findings is confirmation of the fact that "coronal holes," regions where the coronal density and temperature are low, appear to be the source of streams of solar wind. Further work concerns the high densities and temperatures along magnetic coronal arches. This work will lead to a better understanding of the solar corona, and how the solar wind originates in it.

Theoretical work among the SAO members of the division continues on a variety of problems involving non-LTE radiative transfer. This work is being applied to models of the chromosphere and corona and, in particular, to the analysis of the region of the temperature minimum.

Stellar research is being carried out using orbiting ultraviolet telescopes such as the Princeton instrument aboard *Copernicus*. A recent finding is that Capella, a nearby star of solar type, may have a stellar wind. By applying the analytical tools developed for the sun, we hope to infer the properties of this wind. In the future, the division expects to participate in the International Ultraviolet Explorer and Large Space Telescope missions of NASA.

Finally, there is increasing interest in solar-terrestrial relations, based on recent studies that seem to show correlation between indices of solar activity and meteorological changes. Because of the

Center's involvement with research on the sun and the upper atmosphere, it may be possible to make significant contributions to this controversial but exciting field.

THEORETICAL ASTROPHYSICS

Members of this division are engaged in a wide variety of theoretical studies, ranging from stellar atmospheres to cosmology. Recent work has included studies of the equilibrium and stability of galaxies and clusters of galaxies, novel methods of integration of the equation of transfer, molecular processes in interstellar clouds, weak interactions in supernova explosions, the heating of the intergalactic medium, the physics of neutron stars and pulsating white dwarfs, deuterium production in supernovae, and tidal effects in binary systems.

Smithsonian Science Information Exchange, Inc.

The Exchange has experienced a considerable expansion of its activities during the year, both with regard to an expansion of the services provided and in terms of internal improvements designed to enhance the value of its services to users and to incorporate the latest technological improvements which distinguish the Exchange as a major scientific and technological information center.

The Exchange undertook a series of projects for various Federal Agencies which were directed toward meeting national needs in major areas of research interest. Among these were the designation of SSIE as the Current Cancer Research Project Analysis Center (CCRESPAC) by the National Cancer Institute as a part of its International Cancer Research Data Bank (ICRDB) Program. In its role as such a center, the Exchange will be involved in the collection, storage, and retrieval of comprehensive information about current research projects in cancer and cancer-related fields from both national and international sources; transfer of this information to the National Cancer Institute for use through CANCERLINE (an on-line computerized file searchable through the MEDLINE network) which will make this information available to thousands of users engaged in research or the management of cancer projects and

programs. In addition, the Exchange will be developing new vocabulary tools for the indexing and retrieval of such information and will prepare a number of catalogues for publication by the National Cancer Institute intended for dissemination on a worldwide basis. The SSIE will also be providing direct search services to investigators in the cancer field who do not have access to remote terminals. This activity is expected to continue and expand over the next several years and could serve as a prototype for future international centers of ongoing research information in selected areas.

In the field of energy research the Exchange has engaged in a major effort to expand its data base in this field. New input has been obtained from state governments as well as industry. At the international level the Exchange has negotiated arrangements with five European countries and Canada to obtain information in whole or in part on their ongoing energy research projects for input into the system. A directory of international research in energy will be produced during 1975 under a grant from the National Science Foundation, at the request of the Intergovernmental Committee on International Cooperation in Energy Research and Development. The information collected is expected to be helpful in the review and planning of new international efforts in this area.

With support from the National Science Foundation and in an effort to expand United States knowledge of other ongoing research information systems worldwide, and to facilitate the exchange of information, SSIE has taken a series of steps designed to identify and subsequently expand its coverage in selected areas of major national interest. As an important part of this effort the UNISIST Program of UNESCO in conjunction with SSIE has organized a three-day International Symposium on Information Systems and Services in Ongoing Research in Science to be held in Paris in October 1975. Dr. Hersey has been designated as symposium chairman and head of the program committee, which has outlined the purpose of the symposium as threefold:

1. To expand international understanding of the need and uses for information about research in progress,
2. To stimulate the development of improved data collection and dissemination,
3. To encourage worldwide exchange among national and international systems working in this field.

Speakers from all over the world will be representing their organizations and countries. More than forty papers will be presented in addition to two panel sessions involving discussions on problems of operating such systems and meeting user needs.

In addition to the International Symposium, the Exchange has begun discussions with a number of countries which now have, or are in the process of developing, information systems of ongoing research, with the possibility of developing bilateral agreements for the exchange of information in selected areas. These discussions involve problems of compatibility, language, indexing techniques, and the economics of exchange methods. It is particularly noteworthy that an increasing number of countries are developing data bases comparable to SSIE at the national level. The Exchange, which had its inception some twenty-five years ago, is providing other countries with information about its experience gained over that period of time regarding the problems and pitfalls which can be encountered in the operation of such a system. It is expected that the Exchange's discussions in this area will result in making information about ongoing research more widely available not only to United States users but throughout the world in consonance with the Smithsonian's *raison d'être*, "the increase and diffusion of knowledge among men."

Among other activities designed to increase the availability of information to the research community, the Exchange completed an agreement with the System Development Corporation of California to make its data base available for remote interrogation throughout the country for on-line searching. The new SDC/SSIE service is designed to give quick, easy, and economical access from remote computer terminals to a file of over 125,000 summaries of ongoing research projects in the life and physical sciences.

SDC's retrieval program, called ORBIT, permits subscribers to conduct extremely rapid searches through two-way communication terminals located in their own facilities. Searchers may specify their search information inquiry by subject terms, names of researchers, performing organizations, or a number of other access points, or by any combination of these.

After examining the preliminary results of inquiries, searchers will be able to refine their questions further to make them broader or narrower in scope. This interaction between searcher and computer is conducted in simple, English-language statements.

The sdc system is tied into a nationwide communications network, so that most subscribers can link their terminals to the computer through the equivalent of a local telephone call. The sdc Search Service is the world's largest with over five million items (mostly bibliographic) on file for daily use. Users of other sdc services are expected to find access to ssiE an important adjunct to their regular bibliographic searches of such data bases reinforcing the importance of ongoing research information as well as bibliographic information in the overall research management process.

In other major research program activities, the Exchange has completed a number of directories of ongoing research for several federal agencies designed to support research management in such areas as water resources, pesticides, and disaster-related technology. This latter project is particularly noteworthy since it combined information about both ongoing research and abstracts of published technical reports. The Exchange has also developed in conjunction with the National Aeronautics and Space Administration the first federal semimonthly publication containing both ongoing research and bibliographic information. The inclusion of ongoing research in this publication has been well received and is expected to be continued for another year.

The Exchange has continued to develop new techniques in data processing in order to achieve optimum utilization of its staff and equipment. Several of these, such as machine-aided indexing, have already been published and may prove useful to information systems on an international level. The ssiE also produced during the current year several output products in computer output microfiche which may open a whole new approach to improving the use of the Exchange's information. It remains to be seen what kind of user acceptance this type of output receives from the science community. Improved internal operational methods have allowed the Exchange to accomplish its largest input ever, over 130,000 research projects in fiscal year 1975, with only minimal increases in staff. Improved computer programming changes have not only reduced processing costs but increased the speed with which information is now processed through the system. Overall demand for the Exchange's services continues to rise as greater realization of the usefulness of ongoing research information in the research process becomes evident to both governmental and nongovernmental organizations.

In summary, the Exchange has taken a major leadership role in the awareness of ongoing research information, not only in terms of developing and testing a variety of new modes to enhance use of the data collected but in the international area of scientific research in selected special areas. The identification of and exchanges of information which are expected to come from these international activities are expected to benefit not only the United States but the entire worldwide research community as well.

Smithsonian Tropical Research Institute

Research at the Smithsonian Tropical Research Institute (STRI) is a multi-faceted compound of the individual efforts of the scientific staff, research fellows, and associates. A deliberate policy of bringing together a community of permanent staff, who are intrigued and fascinated by the complexity of tropical biotas, has achieved a unity of purpose in seeking to explain this intricacy at all levels of biological organization. They have found the interactions of a variety of disciplines to be a powerful aid to studies of the ecological and evolutionary adaptations of tropical organisms. In a field as relatively unexplored as tropical biology, the work of analysis and synthesis can go on more or less simultaneously; this is certainly the case with the STRI research. This simultaneous approach is illustrated by a sampling of our studies, here reported in brief outline.

The complexity of systems of sexual reproduction and sexual behavior are fundamentally important to organic evolution. Among vertebrates the greatest diversity of patterns of sexual reproduction occurs in the fishes, where several types of hermaphroditism have evolved. Two groups of marine fishes, common on the Caribbean coasts of Panama, are protogynous hermaphrodites (i.e., individuals are first functional females and then become functional males). These fishes, the wrasses and parrotfishes, have been intensively studied by a multidisciplinary group of STRI scientists and fellows. D. R. Robertson, R. W. Warner, D. Diener, and S. Hoffman have conducted extensive field and laboratory research into the behavior, ecology, and physiology of these fishes and E. Leigh has worked

with them to develop mathematical models of the evolution of protogyny and protandry. Models of protogyny have been tested by studying the mating system of one species in great detail. Altogether eighteen species of protogynous hermaphrodites have been the subject of STRI comparative studies. These studies have revealed that there is a great deal of variability in the population structures of the hermaphrodites; in sex ratios, sexual color-phase ratios, and in the proportions of hermaphroditic and nonhermaphroditic individuals present. Alongside studies of the ecology and behavior of free-living fishes, studies have been made of the role of hormones in the process of sex change and also of their role in the equally interesting process of color-phase change. These investigations show that there is much variation between species in the effects of hormones on these two processes and that, in fact, the two processes are often independent.

These studies of hermaphroditism have already yielded an accumulation of basic information on the many aspects of the phenomenon that were previously unknown and at the same time they have led to syntheses of comparative data that permit evolutionary generalizations. Off the coasts of Panama another kind of hermaphroditism is found in the relatively abundant groupers. These fishes are synchronously hermaphroditic, individuals may be male and female at the same time. Work is already in progress on the possible adaptive value of this type of system and E. Fischer will shortly begin a year's pre-doctoral study.

A really basic question about tropical ecology is being asked, and studied, by H. Wolda. He is concerned about fluctuations in the abundance of insects in tropical forests. Many scientists have argued that since tropical forests are extremely complex they should be ecologically much more stable than forests of temperate regions, and insect populations should, accordingly, fluctuate less than in the temperate zone. Wolda's work suggests strongly that this is not true. His data are derived from studies of two separate groups of insects, lepidopterans and homopterans. In the first case, Wolda studied the caterpillars feeding on a tropical violaceous plant and others feeding on figs. Over a period of four years the populations of caterpillars in the Barro Colorado forest showed very considerable fluctuations. One species reached outbreak densities—plague proportions—during two of the study years. Data from homopteran

catches at light traps shows that the lepidopterans are not merely exceptional cases that prove the general rule of constancy and stability. Wolda has taken data from light traps operated at the same sites on Barro Colorado for several years and calculated ratios that highlight changes in abundance from year to year. Data from 110 species have presently been converted to ratios of annual variability. These can be compared with data on temperate insects that are already available in the ecological literature. The results of this comparison are very striking indeed. The variability in the insects in tropical forest is of the same order of magnitude as that for the various groups of insects from the temperate zone. Further studies of other groups on tropical insects are in progress. In these studies Wolda is collaborating with specialists in the groups concerned. He recently communicated his findings at the symposium on Tropical Ecology held at Lubumbashi, Zaire.

Work on adaptive aspects of plant morphology is a comparatively recent focus of tropical biology. At STRI, Alan P. Smith is actively pursuing researches into several problems where preliminary studies of morphological patterns lead directly into quantitative studies of life history and physiological adaptations. Smith is studying adaptive aspects of leaf form in tropical lowland forests, the support systems of tropical trees and has embarked on a long-term study of the life form and life history of tropical alpine plants belonging to the genus *Espeletia*. Three aspects of leaf form are being studied: the elongation of leaf tips into characteristic "drip tips"—long believed to be correlated with the heavy rainfall occurring in tropical forest, lateral asymmetry in leaf shape, and variegation in leaf color. In the latter case, Smith is testing the hypothesis that variegation may be a defense against the leaf-eating larvae of insects, that it may function to deter insects from laying their eggs on the leaf by simulating the effects of insect attack. Smith's studies of *Espeletia* species are being carried out in the Andes of Venezuela and Colombia where the plants are a conspicuous feature of the alpine regions. It is distinguished by a large-leaved rosette supported by a central unbranched or little-branched stem. Beneath the rosette of hairy living leaves the plant accumulates dead leaves as growth takes place. The dead leaves are retained around the stem and persist for many years. This bizarre growth form has evolved repeatedly in tropical alpine areas but is absent in alpine areas to

the north and the south. It is thus an ideal subject for studies aimed at determining the selective forces that operate in tropical alpine environments. Smith has initiated long-term studies of *Espeletia* species, concentrating on growth form and demography. His studies include species with unbranched stems and rosettes of leaves, branched stems and rosettes of leaves, and forms that are simply arborescent. Early results are revealing exciting correlations between growth form, life history, and environmental constraints.

Most studies of animal communication have involved visual and acoustic signaling systems. These are certainly the types of signals most readily understood, and studied, by humans. Michael and Barbara Robinson are studying the courtship and mating behavior of web-building spiders where the signals involved are almost entirely tactile or vibrational. In a broad comparative study they have so far investigated over thirty species in detail. Their aim is to understand the types of signals involved in the contact between male and female, the functional significance of the signals used, and to elucidate the evolutionary stages through which the courtship of spiders has passed. The Robinsons' studies have already shown that early generalizations about spider courtship, based on data from temperate regions, were inaccurate and premature. As in

Espeletia timotensis (Compositae) at 4200 m in the Venezuelan Andes, specialized plants under study by Alan Smith.



all tropical studies, the overwhelming impression from this investigation is that of staggering complexity. The courtship behavior of the male spider has two very important functions; he has to identify himself as nonfood and then stimulate the female into acceptance of his mating attempts. This twofold function of courtship has led to some bizarre behavioral adaptations. In one case the male spider leads the female out onto a line that is directly connected with his silk-producing organs, and, as she rushes towards him he pays out silk so that she never quite catches him. Eventually the female abandons the futile pursuit and either accepts a mating or goes back to her web. While in New Guinea the Robinsons censused all the trap-building spiders in 200 square meters of coffee plantation. With the census data and the results of their previous studies on the prey-consumption of tropical spiders they were able to work out an estimate of the insecticidal effect of the spiders in a hectare of coffee. They calculate that the spiders consume a minimum of forty million insects per hectare annually. This suggests that spiders have an important ecological role and may be of considerable economic importance.

During the past year, Jeffrey Graham was a visiting investigator, for two months, at the National Marine Fisheries Service Laboratory in La Jolla, California. There he collaborated with John L. Roberts of the University of Massachusetts in a study of red and white muscle temperatures and electromyograms of fast-swimming scombrid fishes. Roberts and Graham perfected a technique for surgically implanting thermocouples in fish swimming muscles to enable them to measure muscle temperatures as the fish swam at controlled speeds in a respirometer. In addition, while at La Jolla, Graham completed his study of the types and distribution of retial countercurrent heat exchangers in scombrid fishes. This study has shown that for the seven known species of tuna (*Thunnus*) there is a relationship between the level to which the body temperature is raised and both the type of heat exchanger and the latitudinal distribution of a species. Tropical and subtropical tunas and skip-jacks have the most primitive arrangement of heat exchangers, they have small central heat exchangers, and, in some cases poorly defined lateral ones. On the other hand the three high latitude tuna species have lost central heat exchangers, but have highly developed lateral systems.

Other work on fishes has been carried out by STRI postdoctoral fellow Donald Kramer. Kramer has studied the ecology and behavior of freshwater fishes in Panama, concentrating on detailed studies of feeding behavior and feeding strategies. He has also carried out cooperative studies with Graham on air-breathing freshwater fishes. Graham and Kramer have discovered a phenomenon that they call "synchronous air-breathing." Fishes that exhibit synchronous air-breathing rise together in groups to break the water surface and breathe in air. They break the surface either simultaneously or in rapid succession. Graham and Kramer believe that synchronicity of air-breathing constitutes an antipredator adaptation. Graham, Kramer, and E. Pineda (a graduate fellow from the University of Panama) have recently discovered populations of the characin *Piabucina festae* which is an air-breather and are studying this species and the closely related *Piabucina panamensis*, which is not an air-breather.

The STRI program on human adaptations to tropical areas began this year with an exciting week-long seminar at Barro Colorado Island, where a number of distinguished anthropologists and biologists were invited for informal discussions of new research and recent methodology. Representing the Instituto Venezolano de Investigaciones Científicas were Dra. Erika Wagner, and Dra. Alberta Zucchi, who is working on the ridgefield systems of the Venezuelan Llanos. From Colombia came Drs. Gerardo and Alicia Reichel-Dolmatoff, well known for their pioneering work on the archeology of northern Colombia, and on the ethnology of various Colombian Indian groups. Representing the biological disciplines were Dr. C. Earle Smith of the University of Alabama, and Dr. Alan Covich of Washington University, who together discussed the dynamics of plant domestication and their interaction with faunal communities in the tropics.

Besides holding discussions with the STRI staff and graduate students, as well as with Panamanian professionals, the visiting scientists were taken on a tour of archeological sites in the central provinces. On hand to discuss his own research on the transition from hunting-gathering to agriculture on the Isthmus was Dr. Anthony J. Ranere, a STRI associate, who led the group to show them the Aguadulce preceramic rockshelter, where he is continuing excavations this year. A second morning was spent visiting the



WET SUBMARINE
REEF HUNTER

Martin Moynihan and Arcadio Rodaniche entering a "wet" submarine used in studying the behavior of pelagic squid.

Laborides dimidiatus fighting at the mutual border of their territories on the Great Barrier reef of Australia, where they were studied by Ross Robertson.



site of Sitio Sierra, being excavated at the time by Dr. Richard Cooke, a University of London archeologist and one of STRI's post-doctoral fellows.

Sitio Sierra began as a small prehispanic maize-growing village located on the shores of the Santa Maria river, Coclé province, during the first centuries after the Christian era (circa A.D. 200). Despite having to work one step ahead of bulldozers ready to level off the mounded area in order to plant sugarcane, Dr. Cooke was able to recover an impressive sample of the faunal and floral resources exploited by the riverine group in the drier section of the Isthmus during pre-Sitio Conte days. This was accomplished by fine-screening, excavating housefloors, and concentrating on the horizontal exposure of activity areas. Comparisons of the Sitio Sierra materials with those excavated by Dra. Olga F. Linares of STRI, and members of her research team, is resulting in a volume on the evolution of differential adaptations to the wet versus the seasonal tropics of Panama.

STRI makes an important contribution to interbureau cooperative science programs at the Smithsonian through its support of the ESP (Environmental Sciences Program) Tropical Projects. These are being conducted at STRI facilities, with STRI logistic and technical support, and involve several STRI scientists. The appearance of the 465-page report *Environmental Monitoring and Baseline Data—1973—Tropical Studies* in December 1974 marked a major step in the development of the ESP program in Panama.

The ESP is a long-term study of natural fluctuations in several contrasting environments on Smithsonian-controlled preserves. The tropical projects are sited in the Canal Zone, on a coral reef at Galeta Point, and in forest on Barro Colorado Island.

Even the proverbially stable tropics are not unchanging but are in dynamic rather than static equilibria. They undergo considerable and important fluctuations within each year and also from year to year. To understand the magnitude and impact of these fluctuations careful and repeated measurements must be made at different times of the year and for a number of years. The most valuable results of these studies will not come until a number of years have been studied and the data analysed and compared. The data that have already been collected and published are valuable both to investigators working at the ESP sites and to ecologists studying other environments elsewhere in the world.



Dr. Richard Cooke and assistant excavating at Sitio Sierra,
Coclé Province, Panamá.

The report for 1973 is intended as the first in a series of annuals which will make available the results from a wide range of environmental measurements. These include solar radiation, meteorological, hydrological, botanical, and zoological variables. These data, particularly those collected by the core, or baseline, monitoring programs of N. Smythe on Barro Colorado Island, and D. Meyer and C. Birkeland at Galeta, are presented in considerable detail for 1973 and also summarized in various ways to facilitate comparisons with other years and places. Though the report concentrates on measurements that will be repeated in successive years, it also includes other kinds of baseline data such as maps and species lists.

In this first report the editor, R. Rubinoff, put strong emphasis on developing a format that would allow direct comparison between the tropical marine and terrestrial environments under study, as well as with the temperate ESP projects being conducted at CBCES. A second in the series of annual reports, that for 1974, is currently in preparation.

Investigators from the Smithsonian Institution involved in the ESP Tropical Projects during fiscal year 1975 included: W. Klein, RBL; T. Erwin, M. Hale, C. Handley, R. Heyer, R. Thornington, and

G. Zug, all of MNH; G. Montgomery, NZP; as well as C. Birkeland, E. Leigh, D. Meyer, S. Rand, R. Rubinoff, N. Smythe, and H. Wolda, STRI. Several investigators from outside the Smithsonian were partially supported by ESP, particularly R. Foster, University of Chicago, and J. Lawrence, Harvard University. A number of students and visiting scientists at STRI have also made important contributions to the projects.

During April, Drs. Glynn and Birkeland accompanied by Martin Wells of Cornell University made an expedition to the Galapagos Islands where a survey of the coral reefs was initiated in cooperation with G. M. Wellington of the Charles Darwin Research Station. Through the cooperation of the CDRS and the Ecuadorian National Park Service, about twenty species of corals were identified, at least three of which are new to science, and a preliminary analysis of the distribution and ecology of Galapagos corals was begun.

Based upon a visit to Papua, New Guinea, by Rubinoff and Rand, the Smithsonian became a sponsoring member of the Wau Ecology Institute. With support from the International Environmental Program and the Fluid Research Fund, STRI sent Dr. Tyson Roberts to initiate an ecological investigation of the fishes of the Fly River and Dr. Alan Smith to begin studies of tree ferns on Mt. Wilhelm in Papua, New Guinea.

Our program of providing short-term fellowships to introduce students to tropical research was continued with grants from the Henry L. and Grace Doherty and the Edward John Noble foundations. More than twenty-four students from the United States, Panama, Colombia, Canada, and the Virgin Islands participated in the program during fiscal year 1975.

Dr. D. R. Robertson, a fish behaviorist, has accepted an appointment as our newest staff member. He will continue his work on the sexual behavior of fishes.

During 1975, major rebuilding was begun on the main laboratory on Barro Colorado Island. When completed, the building will include a series of centrally air-conditioned individual laboratories, a classroom, instrument room, and dark room. The first phase of the Tivoli laboratory has been completed. The first wing includes space for the herbarium which occupies what we hope will be its final home. A contract has been awarded for the second phase of the Tivoli renovation.



The opening on October 1, 1974, of the Hirshhorn Museum and Sculpture Garden was a major event of fiscal year 1975. The view above is from the Mall.

HISTORY AND ART

CHARLES BLITZER, ASSISTANT SECRETARY

IN HIS RECENT VOLUME of reminiscences, charmingly and most appropriately titled *Self-Portrait with Donors*, the former Director of the National Gallery of Art laments a change he has observed in the thinking of museum directors. "Until recently the directors of European and American museums have had the same basic philosophy," John Walker writes. "Their primary interest has been the acquisition of masterpieces." Of late, he observes, this interest has been subordinated to a concern for "relevance" and for rather vaguely defined programs of "social service." Mr. Walker leaves no doubt where his sympathies lie: "I fervently hope my colleagues will regain faith in their original mission, which once was to assemble and exhibit masterpieces."

Despite the survival in the art museum world of a few individual directors who compete flamboyantly for the title of Grand Acquisitor, Mr. Walker's characterization is evidently correct for the profession as a whole. In a survey conducted last year for the National Endowment for the Arts, a national sample of museum directors was asked to evaluate in order of importance ten specified functions of museums. In the resulting list, "acquiring works or specimens" was rated fifth by the respondents; art museum directors rated acquisition as fourth in importance, history museum directors rated it as fifth, and art/history museum directors rated it as fifth.¹ Exhibitions, conservation, the education of children, and

¹ *Museums USA*, published by the National Endowment for the Arts, 1974, page 28.

service as a "scholarly and information resource" were all deemed to be more important. The current attitudes of the public seem to reflect a similar skepticism about the overwhelming importance of acquisitions. Understandably, a would-be visitor who finds his favorite museum closed due to financial difficulties is apt to be less than enthusiastic when that same museum purchases a multimillion dollar object or collection; and he is not very interested in talk of restricted endowments and earmarked purchase funds.

Granting that Mr. Walker's explicit emphasis on the acquisition of "masterpieces" severely limits the generality of his message, which is primarily addressed to the directors and trustees of great and wealthy art museums, there does seem to be an element of paradox in the results of the Arts Endowment survey. For the fact is that each of the functions regarded as more important than the *acquisition* of collections presupposes the *existence* of collections. One is reminded of a similar paradox that at least used to exist in colleges and universities: the marriage of a faculty member and a student tended to be viewed with great pleasure in the community, but the courtship of a student by a faculty member was generally thought to be improper if not positively indecent. Similarly, it is assumed that museums *have* collections, but there is some uneasiness about the notion that they should *get* collections.

In all fairness one must admit that attitudes in the museum world are no less pendulum-like than those in other areas of human endeavor. The results of the Arts Endowment survey mirror a rather recent shift of emphasis from the goal of acquiring objects to the goal of preserving and using them. Mr. Walker himself applauds the development of long-term loan programs, through which museums with vast collections in storage can help to fill the galleries of less fortunate museums. The growing concern for conservation of museum objects should undoubtedly lead to a welcome redistribution of museum resources. Similarly, a persuasive case can be made for the variety of activities designed both to widen and to deepen the use of objects that museums already have in their collections. The Smithsonian is proud of having participated in each of these developments, and intends to continue to do so.

But perhaps the pendulum has swung a trifle too far? Perhaps we should heed Mr. Walker's advice and regain faith in our original mission of acquiring? To do so, to maintain an active interest in

acquisitions, would seem to be required as part of our obligation to posterity, to the future generations who will then be able to use what we have collected as we use what earlier generations collected.

Various branches of the Smithsonian Institution illustrate in very concrete terms some of the forms this obligation can assume. The case of the National Zoological Park is admittedly unique, for here the mortality of living animals absolutely requires constant replenishment of the collections. But the case of a museum of contemporary art is not so very different; the necessity of keeping abreast with interesting and important new artistic developments is absolute if such a museum is to fulfill its role. Similarly, unless we assume that the history of American art and the history of technology are somehow going to come to a halt, museums devoted to these subjects must continue to acquire objects of historical significance in their fields. A national gallery of portraiture, representing men and women who contribute to the development of our Nation, must assume that such men and women will continue to appear on the scene, although their likenesses may increasingly be photographs, films, and videotapes rather than paintings and sculptures. Even in museums less obviously committed to keeping up with new developments, the case for filling the gap in the record of the past is powerful indeed. It is precisely because we are concerned with the use of our collections that we feel so strongly the need to make them more useful, which more often than not means making them more complete. And this, of course, is what acquisition is.

The Smithsonian can also serve to illustrate, however, the fact that acquiring does not necessarily mean purchasing. Again the case of the National Zoo is unique, for its collections have the happy ability to reproduce themselves—an ability that will presumably be enhanced by the Zoo's new breeding farm. In many other cases, notably those covered by the rubric Natural History, objects are typically acquired by scientific expeditions. But, in the arts, and to a very large extent in the various fields of history, the usual options are gifts (including bequests) and purchases. Throughout its history, the Smithsonian has relied overwhelmingly upon gifts in forming the national collections, and it continues to do so. The fact that virtually every imaginable sort of object is now avidly col-

lected by someone, and the fact that the prices of things that are collected rise at a rate considerably in excess of the general rate of inflation, have combined to make our reliance upon gifts and bequests more important than ever. The day when the knowledgeable and energetic curator could find objects of museum quality in attics or rubbish heaps, or could purchase them for a pittance because they were out of fashion, is surely gone and will not return.

The Smithsonian's dependence upon gifts, and its very notable success in attracting them, is surely not unrelated to its performance in using what it has been given. In a sense, then, we are led to another paradox, one which perhaps resolves the apparent conflict between acquisition and use. Donors, who should not be assumed to be any less intelligent and sensitive than other people, want to know that what they give to museums will be cared for, will be exhibited, and will be used by scholars and perhaps even school children. Thus acquisitions may well be the result of other activities, not an alternative to them. If the age of sheer acquisitiveness, of acquisitiveness for its own sake is over, museum officials must not react to its excesses by turning their attention away from a prudent and measured program of acquisitions, acquisitions for *use*.

In the case of the Smithsonian, this will involve several things apart from encouraging our Zoo animals to reproduce and our natural historians to collect in the field. It will involve continuing efforts to demonstrate that what we acquire is properly cared for and imaginatively used. It will involve continuing requests for funds to be used in the acquisition of objects that are urgently needed to fill gaps in our collections, objects that complete the historical record or make possible an important exhibition, which might never come to us if we were to rely solely upon the uncertainties of gifts and bequests. It means also that we will continue to hope for a change in the tax laws that will once again encourage artists to donate their own works to museums. To the extent that these efforts are successful and this hope is realized, future generations will be able to build upon our achievements as we endeavor to build upon those of our predecessors.

Archives of American Art

That research in American art is a thriving activity is clearly reflected in the growing use of documentary resources at the Archives of American Art. During the past year students and more advanced scholars made 1750 visits to consult Archives holdings at the five regional offices in Boston, New York, Washington, D.C., Detroit, and San Francisco, an increase of more than 400 over the number in 1974. Researchers in thirty-two states and three foreign countries borrowed 550 rolls of microfilm through interlibrary loans.

In serving the needs of art historians, the Archives continues to seek out and assemble the records of artists, dealers, critics, and art societies. Over 250 collections were accessioned this year, some of them of major significance for investigations of American art in the nineteenth and twentieth centuries. The papers of the contemporary sculptor Joseph Cornell, the largest single group received, include quantities of notes, correspondence, clippings, and the objects and artifacts that comprised the elements of Cornell's work. Other especially useful collections were the papers of the art historian William Seitz; of the painters Philip Evergood, Abraham Rattner, and Moses Soyer; of the dealers Martin Birnbaum and Betty Parsons; of the architect Albert Kahn; and of the photographer Imogen Cunningham. Diaries kept by the painter Robert Henri over a fifty-year period were lent for microfilming, as were important groups of letters from Frederick Remington, Charles Burchfield, Frank Duveneck, and Bernard Berenson.

"From Reliable Sources," the first exhibition of letters, photographs, and other documents selected from Archives holdings, commemorated the Archives' twentieth anniversary. Installed in an attractively designed room made available by the National Portrait Gallery, the exhibition opened in November to enthusiastic acclaim from both press and public. An illustrated catalogue published for the occasion includes transcripts of the documents shown, together with introductory essays on the Archives and on the significance of historical papers.

The Archives staff devoted much effort during the year to the preparation of a comprehensive checklist of Archives holdings. Over 3000 entries incorporate information on quantity, inclusive dates, and forms of documentation. The checklist will be pub-



Robert Henri whose diaries, covering 1881–1928, were microfilmed by the Archives of American Art.

lished for distribution to libraries and art history departments on a national basis. The Archives continues to bring its resources to the attention of the scholarly community through its quarterly *Journal*, which carries articles based on Archives holdings and describes recent acquisitions. In another move to inform students of useful research material at the Archives, the Area Directors instituted a series of talks at university art history departments in Massachusetts, Michigan, and California.

The Archives Oral History Project carried on its work of recording reminiscences and thoughts of persons involved in American art. Taped interviews with two elder statesmen of the museum world, Bartlett Hayes and William Milliken, provide

detailed information on their careers. Among artists interviewed during the year were Andrew Dasburg, Jimmie Ernst, Robert Motherwell, Isama Hoguchi, and Claes Oldenburg.

More than fifty books, articles, exhibition catalogues, dissertations, and theses completed in 1975 acknowledged assistance from the Archives. These included published monographs on Albert Bierstadt, Ward Lockwood, and Everett Shinn, catalogues on Cecilia Beaux and David Smith, articles on Raphael Peale and Benjamin West, and dissertations on Alexander Calder and Max Weber. Articles on the Archives appeared in the *New York Times* and several art periodicals, including three published in California.

Cooper-Hewitt Museum of Decorative Arts and Design

Renovation was begun in the summer of 1974 on the Andrew Carnegie Mansion—future home of the Cooper-Hewitt Museum of Decorative Arts and Design—at 91st Street and Fifth Avenue in New York City. Work is scheduled for completion by October 1975 at which time the Museum will install its collections, library, and exhibitions for a March 1976 opening. The opening exhibition is being designed by architect Hans Hollein, with significant international participation. In conjunction with the main exhibition, the Museum is organizing thirty satellite exhibitions in museums, libraries, and universities in New York—lending collections which are particularly suited to those institutions. The satellite exhibitions will serve as an “homage” to the Cooper-Hewitt.

The Museum organized the first full-scale exhibition of Winslow Homer drawings, water colors, and paintings to appear in Europe. The exhibition opened at the Victoria and Albert in London in November 1974 to great acclaim. Other exhibitions of Cooper-Hewitt material during the year were “Thomas Moran: Drawings of the West,” “Frederic E. Church Oil Sketches and Drawings,” “Italian Drawings and Master Printmakers,” and “Prints by Whistler, Hassam, and Moran.” In addition, the Cooper-Hewitt participated in exhibitions at twenty museums and galleries.

A first in a series of exhibitions outside the Museum’s walls took place in June. The exhibition “Immovable Objects” invited visitors



to view objects in Lower Manhattan—buildings, plazas, piers, parks, street furniture—either for their intrinsic architectural quality or for their effect on the design of the city. A catalogue was published which served as a guide to the objects and which listed a series of events—parades, tours, special exhibitions—in the area.

The Museum accepted 886 gifts for the collections and 39,317 items for the library. Among the most important were a large group of designs by Simon Lissim for porcelain, silver, playing cards, and screens; an eighteenth-century altar frontal embroidered in China for the Western market; and seventeen pieces of art deco and Tiffany glass and metalwork. In addition, McDonnell Aircraft Company has donated equipment necessary to establish a holography laboratory. An Advisory Committee for the Museum's Holography Program is headed by Dr. Denis Gabor, the Nobel Laureate.

Facing page:

Red Grooms and helpers adjusting the Customs House which he constructed for the "Immovable Objects" parade.

Right:

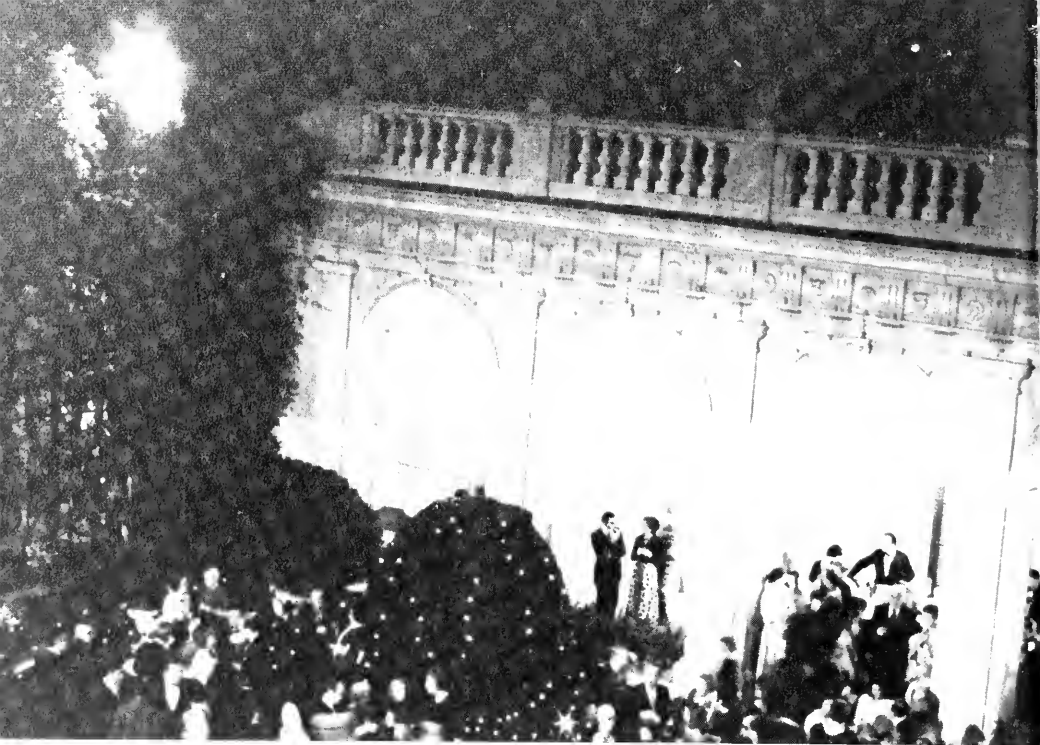
John Dobkin, Administrator of the Cooper-Hewitt, in the Singer Building, constructed by Peter Wilson of the architectural firm of Hardy Holzman and Pfeiffer. The parade inaugurating the "Immovable Objects" exhibition moved from City Hall to Chase Manhattan Plaza at noon on June 18, 1975.



During the year, the Museum has given five objects to the Metropolitan Museum of Art, twenty to the Royal Ontario Museum, and twenty-three objects were transferred to the National Collection of Fine Arts.

A second annual benefit auction was held in May in the Museum garden, with Mrs. Gerald Ford as honorary patron. Proceeds of the auction, approximately \$125,000, were contributed to the renovation of the Carnegie Mansion. In addition, the Museum received major grants from the New York State Council on the Arts, the National Endowment for the Arts, and the Mobil Foundation.

Two members have been added to the staff: as Librarian, Mr. Robert Kaufmann, former librarian of the Art and Architecture School at Yale; and, as Curator of Decorative Arts, Mr. J. Stewart Johnson, former curator of decorative arts at the Brooklyn Museum. Sadly, we must report that Mrs. Mary Blackwelder, Museum Registrar for eighteen years, died in April, after a long illness.



Gala night at the Freer Gallery of Art as an exhibition of Islamic art—"Art of the Arab World"—is opened. The Freer Gallery of Art was assisted in arranging this exhibition by a grant from the Mobil Oil Corporation.

Dr. Esin Atil, Associate Curator, Near Eastern Art, Freer Gallery of Art, shows Mobil's President William P. Tavoulaareas (on the right) the unique decoration on one of the eighty objects of art displayed in the "Art of the Arab World" exhibition.



Freer Gallery of Art

Recent international developments continue to stimulate interest in the cultures of the Near and the Far East. Understandably, that interest is reflected in the increasing number of visitors to the Freer Gallery of Art. In addition, members of the curatorial staff have noted a sharp increase in requests for information relating to the Near and Far Eastern collections during fiscal year 1975.

Members of the Freer curatorial staff served as consultants in the organization of the Exhibition of Archaeological Finds of the People's Republic of China, which was shown at the National Gallery of Art from December 13, 1974, through March 30, 1975. The Chinese curators who accompanied the exhibition made a number of lengthy visits to the Freer Gallery of Art, studying Chinese art objects in the galleries and in storage. Attendance at the Freer Gallery of Art increased significantly during the period of the Chinese exhibition. To meet the unusually large number of requests for docent service, the Gallery added a new docent to the staff thereby supplementing the existing educational program by offering gallery tours on a regular basis.

For many years the Technical Laboratory of the Freer Gallery of Art has been engaged in research relating to metal corrosion. W. T. Chase, Head Conservator, was asked by the John D. Rockefeller III Fund to survey the major conservation facilities and bronze collections in Asia and to recommend ways in which some of the more pressing problems of bronze conservation might be alleviated. Mr. Chase strongly advised that an organized program of bronze treatment and care be established in Thailand to prevent the further deterioration of the extraordinary number of objects infected with bronze disease. At the same time, a project was also begun on an exhibition to be shown in Bangkok which would demonstrate the importance of a national conservation program in Thailand. Mr. Chase assisted in the selection, planning, and organization of the exhibition. He also wrote the text used in the catalogue.

Dr. Esin Atil, Curator of Near Eastern Art, organized a special exhibition entitled, "Art of the Arab World." In the catalogue written by Dr. Atil, each of the eighty objects included in the exhibition is illustrated in color and discussed in detail. Approxi-

mately 1000 people attended the opening of the special exhibition on May 8. A grant from Mobil Oil Corporation helped defray the costs of the exhibition.

The large collection of American paintings is among the most important included in the original Charles Lang Freer bequest. The numerous works by James McNeill Whistler make the Gallery a focal point for any study of that artist. Dr. Susan Hobbs joined the Smithsonian Institution during fiscal year 1975, serving as Joint-Curator of American Art both in the Freer Gallery of Art and in the National Collection of Fine Arts. Dr. Hobbs is currently reviewing the entire American collection in the Gallery preparatory to writing the catalogue for a special exhibition of American paintings scheduled for 1976. Dr. Hobbs is also preparing entries on a select group of American paintings to be illustrated in the Freer handbook.

The Oriental painting mounting studio at the Freer Gallery of Art has been in operation since the Gallery opened to the public in 1923. For many years, the Freer studio was the only such facility in the United States. The three mounters who constitute the present staff are among the delegates who will attend the Japan-America Cultural Conference at the Freer Gallery of Art in August 1975. The purpose of the meeting is to discuss ways of improving mutual exchange of exhibitions, especially as relates to the proper conservation of art objects.

In the course of fiscal year 1975, the collections were expanded by the accession of twenty-two objects. Of those, several fine items were acquired by gift from Mr. and Mrs. Province Henry of McLean, Virginia. Over 300 volumes, catalogues, reports, periodicals, bulletins, and notebooks were given to the library by Mrs. Rutherford J. Gettens, Colonel F. B. Hoffman, and Mr. and Mrs. Province Henry.

The Cultural Department of the Imperial Embassy of Iran and the Freer Gallery of Art presented a series of four lectures on "The Art and Civilization of Iran." A lecture on Japanese culture, jointly sponsored by the Embassy of Japan and the Freer Gallery of Art, was included in the Gallery's 22nd Annual Series of "Illustrated Lectures on Oriental Art."

Right:
Japanese wood sculpture; Kamakura period, A.D. 1185-1333. Zochō-ten (one of the set of Shitenno); polychrome. Height 31½ inches. Freer Gallery of Art.

Below left:
Chinese bronze ritual vessel of the type *yu*; Shang dynasty, ca. 1523-1028 B.C. Height: 12½ inches. Freer Gallery of Art.

Below right:
Persian metalwork; Achaemenid period, fifth century B.C.; made for Artaxerxes, the son of Xerxes, grandson of Darius. Silver Phiale with repoussé decoration representing radiating stems and lotus flowers. Inscription on the rim: Artaxerxes, the Great King, King of Kings, King of Countries, son of Xerxes the King, of Xerxes (who was) son of Darius the King, in whose royal house this silver saucer was made. Height: 1⅞ inches; diameter: 11⅝ inches. Freer Gallery of Art.





Opening night speech by Mr. Hirshhorn, October 1, 1974.

Distinguished visitors admire lighted fountain in the inner circular court of the Hirshhorn Museum on opening night, October 1, 1974.



Hillwood

Although the status of Hillwood remained that of an unopened museum during the past fiscal year, much activity was taking place behind the scenes. The several thousand objects contained in the Marjorie Merriweather Post collections were classified and recorded by the staff.

Records were made of all objects of art after checking the estate inventory, and polaroid pictures were taken of all objects which had not been previously photographed. A large number of gifts, notably those from members of the Post family, were recorded.

The assistant curator established a special system for assigning accession numbers to the objects in the art collection. Since this collection consists predominantly of the decorative arts, the system is based on the materials out of which the objects are made, e.g., gold, porcelain, wood, etc. A card file, arranged according to these categories, is being prepared with the assistance of a part-time volunteer. Another card file records the location of the object. Thus far, approximately 2200 cards have been made for objects in Mrs. Post's bequest of September 1973.

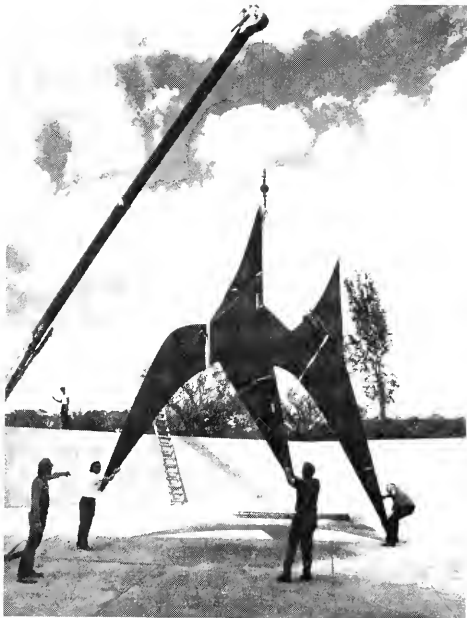
Hirshhorn Museum and Sculpture Garden

A major contribution to the cultural life of both Washington and the Nation was marked by the opening of the Hirshhorn Museum and Sculpture Garden on October 1, 1974.

In the first six months of its operation, over one million visitors were attracted to this new national museum of contemporary art. The substantial percentage of repeat visitors indicated that this enthusiastic public response comes from an interest far deeper than mere curiosity about the Smithsonian Institution's newest museum on the Mall.

During the Museum's first six months, the following public services were initiated:

- (1) A thrice weekly film program, including evening presentations and Saturday matinee special features for children;
- (2) A monthly Sunday lecture series given by outstanding art historians, critics, and scholars;



*Left: Sculpture removal by helicopter from Greenwich, Connecticut, in August 1974, for placement in the Hirshhorn Museum and Sculpture Garden. Right: Installation of *Two Disks* by Alexander Calder, August 1974, at the Hirshhorn Museum and Sculpture Garden. Below: Hirshhorn Sculpture Garden as seen from the Mall.*





Outer court of the Hirshhorn Museum and Sculpture Garden.

(3) A special four-part lecture series supported by a grant from the National Endowment for the Humanities;

(4) A guide program utilizing 135 specially trained docents, providing regularly scheduled special tours for the public, as well as tours for visiting national and international dignitaries;

(5) A series of concerts of contemporary music presented in collaboration with the Smithsonian Institution's Division of Performing Arts;

(6) Two intern programs, one of which provides an opportunity for university-enrolled students to earn applicable credits at the graduate level and the other of which establishes a summer program for a group of five undergraduate students.

The transfer to Washington of the Museum's collection of more than 6000 works of art from storage in New York, Toronto, and the Hirshhorn estate in Connecticut was completed in September 1974. Painting and sculpture not included in the Inaugural Exhibition were unpacked, examined, and stored in the painting and sculpture study-storage areas, located on the fourth floor and lower level of the Museum, respectively. Many aspects of this move, as well as of the installation of the Inaugural Exhibition, were captured in a film entitled *A Life of Its Own*.

A catalogue of the Hirshhorn Museum and Sculpture Garden's Inaugural Exhibition was published in both hard cover and paperback editions at the time of the opening. This volume, now in its second edition, includes 1019 reproductions—290 in color—of paintings and sculpture in the Museum's collection. Also included is a foreword by S. Dillon Ripley, Secretary of the Smithsonian; an introduction by Abram Lerner, Director of the Hirshhorn Museum; and essays by six outstanding art scholars. The documentation of 1001 works of art was supervised by Curator Cynthia J. McCabe. A souvenir booklet, *An Introduction to the Hirshhorn Museum and Sculpture Garden*, was also published for the opening.

Since the opening, the Museum's Department of Painting and Sculpture has actively continued its research on the Museum's collection. An archive on the collection has been set up under the supervision of Curator Inez Garson; material in the archive will be available to scholars in the field. In addition, basic information on the collection has been entered in the Smithsonian Institution's computer.

Coinciding with the Museum's public opening, a loan exhibition, "Sculptors and Their Drawings: Selections from the Hirshhorn Museum Collection," opened at the Lyndon Baines Johnson Library of the University of Texas in Austin. A catalogue was published for this exhibition, which was viewed by 95,000 visitors between October 4, 1974, and January 5, 1975.

Other loans from the museum collection included a Man Ray painting to the Delaware Art Museum; three paintings by Arthur B. Davies to the Knoedler Gallery; two paintings by Thomas Eakins and one by Ernest Lawson to the National Collection of Fine Arts; two paintings by Yasuo Kuniyoshi to the University of Texas Art Museum in Austin; and three paintings by Ralph Albert Blakelock to the University of Nebraska Art Galleries. In addition, twenty-two paintings were loaned to the White House for use in the Executive Offices and the Residence.

From December 15, 1974, to January 13, 1975, an exhibition of works honoring the ninetieth birthdays of sculptor José de Creeft and painter Ben Benn was held in the Hirshhorn Museum's lower-level lobby.

"Artist-Immigrants of America 1876 to 1976," the Museum's Bicentennial exhibition, is being organized by Curator Cynthia J. McCabe. It will consist of more than 230 works by approximately 70 foreign-born painters, sculptors, architects, photographers, and filmmakers. The exhibition, which will open in May 1976, will be shown in the second-floor exhibition galleries and on the outdoor plaza.

Also in preparation are the two exhibitions that will inaugurate the Hirshhorn Museum's program of temporary exhibitions: "Soto: A Retrospective Exhibition," September 25 to November 9, 1975, and "The Sculpture and Drawings of Elie Nadelman," December 18, 1975, to February 15, 1976.

The personnel of the new Conservation Laboratory began to prepare condition reports on the over 6000 works of art in the Museum, and at the same time planned and developed an overall laboratory layout, which will provide the necessary facilities for a program of professional conservation and preservation of the permanent collection.

Since the official opening last October, the Department of Exhibits and Design has been conducting a systematic program of



Curving sculpture hall in the Hirshhorn Museum and Sculpture Garden rings inner circular court.

daily gallery inspection and maintenance. In addition, the Department is supervising the repainting of gallery walls and pedestals, as well as the installation of Plexiglas vitrines, as deemed necessary for the protection of paintings and sculpture.

The Education Department of the Hirshhorn Museum has the task of interpreting the collections of the Museum to a broad and varied public. Programs initiated by the Education Department included a series of docent tours for school groups, organized adult groups, and walk-in visitors; the preparation of printed material for museum visitors; and the installation of Telesonic electronic guided tours.

Fifty-five volunteer docents completed the first docent training given between January 15, 1974, and the opening of the Museum; guided tours in the Museum's galleries commenced on October 7, 1974. During the nine-month period through June 1975, the following tours were given:

Elementary Schools	229 tours	10,018 students
Secondary Schools	105 tours	4,876 students
Adult Groups	385 tours	13,775 adults
General (unscheduled)	789 tours	12,084 adults/children
Total	1,508 tours	40,753 visitors

During this period, the Museum's docents gave over 4500 hours of volunteer service.

To meet the increasing needs for additional docents, particularly during the Bicentennial year, the Museum undertook a second docent training program. Two hundred and fifty applications were received and ninety persons were selected for this second program, which began on January 7, 1975, and continued through April 15. Seventy-six docents successfully completed this second course. At the present time, the Museum has a total of 131 docents available for touring.

Prior to the Museum's opening in October, work was completed on five special illustrated leaflets for free public distribution throughout the Museum. To date, over half a million of these brochures have been distributed to Museum visitors. Also under the auspices of the Education Department was the Museum's auditorium program of films, lectures, and concerts. Through April a total of sixty-seven film programs were presented. Ten lectures on art were given between November 1974 and June 1975. Included among the lecturers were Dore Ashton, Irving Sandler, Anne Hanson, Milton Brown, Daniel Robins, and Walter Rosenblum. A special series of four lectures on Twentieth-Century Art was given by Professor Robert Rosenblum of New York University: "Sexism: Picasso as a Male Chauvinist;" "High Art Versus Low Art: Cubism as Pop;" "War: Art From Sarajevo to Hiroshima;" and "Religion: The Deities in Abstract Art."

As an adjunct to the film program, talks on film as an art medium were given by Derek Lamb, Rosalind Schneider, Doris Chase, Robert Breer, John and Faith Hubley, Frank Mouris, and Lillian Schwartz.

Among the major new American works performed in the auditorium concert series were "Four Butterflies" by Morton Subotnick, "Black Angels" by George Crumb, and "Conflicts '74" by Lloyd Ultan.

Joseph Henry Papers

Volume two of *The Papers of Joseph Henry*, now in the hands of the Smithsonian Press, will appear in print in December 1975. Documented in this volume are Henry's first three years at Princeton (1832-1835), where his systematic pursuit of earlier discoveries in electromagnetic induction brought him increased prominence and into direct rivalry with his great British contemporary, Michael Faraday. The volume includes extensive selections from personal and professional correspondence, detailed laboratory notes, and lengthy diary entries on the contemporary scientific scene. Publication ceremonies are being planned for Princeton in December.

The next installment of *The Papers of Joseph Henry* series is now in progress, tracing Henry's career at Princeton through mid-1838. Of paramount interest in volume three are diary entries on Henry's first European tour in 1837. With his usual curiosity and candor, Henry compares European and American science and culture. Especially noteworthy are detailed observations on European technological installations, such as lighthouse systems, that foreshadow Henry's later involvement with comparable American projects. In addition to preparing the letterpress series, the Henry Papers' staff continues to work toward a special volume of Henry's lectures and addresses, designed to reach both a scholarly and popular audience.

During the last year, the Institution received title to the surviving library of Alexander Graham Bell, a major section of which comprises the Joseph Henry Library, which had been on loan to the Henry Papers project for over five years. An inventory of the Bell books revealed about 150 additional Henry volumes. The entire collection, amounting to some 2800 volumes, will be formally installed at the Smithsonian as the Bell-Henry Library. Major steps have been taken toward developing a publishable catalogue of the Henry Library, with the use of a computer index. An index to the Henry annotations contained in the books and pamphlets has also been prepared. Bell's valuable collection of scientific books will also be indexed by computer.

The appearance, in 1972, of the first volume in *The Papers of Joseph Henry* series has made scholars increasingly aware of the Henry Papers as an important data resource for the history of

science. Copies of the vast bulk of private manuscripts relating to Henry's career are now on hand at the project and indexed by computer. The collections have attracted numerous students and outside scholars to work at the Henry Papers over the past year; research topics included studies of the French physicist Ampère, of the American explorer and naturalist Kennicott, and of the geologist G. K. Gilbert. The nineteenth-century seminar, sponsored by the Henry Papers, continues to draw scholars from both within and outside the Institution.

National Armed Forces Museum Advisory Board

At its meeting on December 16, 1974, the National Armed Forces Museum Advisory Board approved a report to the Board of Regents of the Smithsonian Institution concerning its participation in an investigation and survey of lands and buildings in and near the District of Columbia suitable for the display of military collections, pursuant to the provisions of Section 3(a) of the Act of August 30, 1961 (75 Stat. 414, 20 USC 80-80d), which established the Board.

The Advisory Board noted that its participation in the investigation and survey was lengthy and thorough, extending from 1962 to 1974. During those years, with the assistance of the Advisory Board and with the approval of the Board of Regents, the Smithsonian Institution made a series of efforts, without success, to acquire a suitable site on which to establish a National Armed Forces Museum as a separate entity with facilities as were suggested in Section 3(b) of the Act of August 30, 1961. The Advisory Board recommended that, in view of recent history, the Smithsonian not renew such efforts until circumstances materially change.

The Advisory Board expressed its satisfaction at the establishment, in the National Museum of History and Technology, of the study center—known as the Dwight D. Eisenhower Institute for Historical Research—authorized under Section 2(a) of the Act of August 30, 1961. The Board stated its conviction and recommended that this study center, working in concert with the curatorial and exhibits components of the National Museum of History and

Technology, can and should play a vital part in the development of future Smithsonian programs toward portrayal of the historic contributions of the Armed Forces of the United States to American society and culture.

The Advisory Board recommended further that the Smithsonian act (1) within the National Museum of History and Technology and (2) in concert with the Department of the Interior, at Fort Washington, Maryland, to carry out to the fullest extent possible the purposes of Section 2(a) of the Act of August 30, 1961, which calls for the creative display of military artifacts to further the public's understanding of the role of the military forces in our national life. The Advisory Board stated its readiness to advise and assist the Board of Regents toward the furtherance of all programs to carry out this goal.

National Collection of Fine Arts

Over the years, from the very beginning of the Smithsonian, the collection which is now the National Collection of Fine Arts has acquired a wide and representative range of American art, including not only works by the acknowledged great, but also those by artists who were acclaimed in their time but ignored by succeeding generations. Now numbering over 17,000 works, the NCFAs continues to be concerned with all aspects of American art. It searches for works to fill areas poorly covered in the past and acquires a broad cross section of contemporary material. It is rare, however, that it has the pleasure of adding to the Collection such masterpieces as the two superb portraits by Ralph Earl, painted in 1792, acquired by purchase and partial gift this year. According to the descendant from whom the works were acquired, the stern-faced Mrs. Mary W. Alsop took over the family importing business on the death of her husband, using her helpful mother, the subject of the other portrait, as a kind of watchful lieutenant. The carefully specific landscapes in the backgrounds are among Earl's finest.

Notable among the other 995 paintings, graphic works, and sculpture added to the Collection this year were Charles Willson Peale's portrait of Mathias and Thomas Bordley, probably his most



Ralph Earl, *Portrait of Mrs. Mary W. Alsop*,
1792, National Collection of Fine Arts.



Gertrude Stein by Red Grooms,
National Collection of Fine Arts.

important miniature painting; William Rimmer's evocative little painting, *At the Window*; Roger Brown's *World's Tallest Disaster* (from the "Made in Chicago" exhibition); and many fine twentieth-century prints and drawings including Red Grooms's three-dimensional print of Gertrude Stein. Special attention has been given to graphic works from the 1920s and 1930s, a period in which the NCA has a particular interest, such as its Louis Lozowick's 1928 lithograph *Crane*.

Since many paintings acquired by the collection or shown in its exhibitions represent forgotten aspects of American art, they often have suffered physical neglect and must be restored before they regain their rightful historical content. NCA's conservation staff—a conservator of paper was added this year—is kept busy not only maintaining the health of the works of art but revealing the true appearance of the past. Many brown-tinged paintings selected for the "American Art in the Barbizon Mood" exhibition emerged fresh and brilliant in hue, forcing a reevaluation of some historical assumptions. A large percentage of the works in the exhibition "Academy" were cleaned for the first time in many years and again could dazzle the eye as they originally did.

The physical space and context in which works of art are seen is of major concern to the NCA. All exhibitions, including those in the Renwick Gallery, are mounted so that the individual works can have the space, color, and general atmosphere necessary for their full appreciation. The temporary exhibitions that were presented this year in the large third-floor gallery were especially striking, from the shadowy motel-like complex of "Made in Chicago," in which each artist had a room painted with the color of his choice, to the rich soft colors and free flowing space of "American Art in the Barbizon Mood," and finally to the formal dignity of "Academy: the Academic Tradition in American Art," with its effect of an atrium with diffused light and four surrounding galleries painted in colors sympathetic to works from the periods they represented. All designs were by Val Lewton of the Department of Exhibition and Design, who also held a one-man exhibition of his paintings in June. This year's temporary exhibitions at the Renwick were just as dramatic, ranging from the rather sombre dignity of "The Goldsmith," to the sprightly and irreverent "Figure and Fantasy," and to the elegantly proportioned display of "A

Modern Consciousness," showing the furniture introduced over the years by D. J. Dupree and Florence Knoll. These installations were designed by Renwick Curator Michael Monroe.

In all, eighteen exhibitions were produced by the NCA during the year, including sculptures and drawings by "Chaim Gross"; works by "Ilya Bolotowsky" (produced with the Guggenheim Museum); "Two Decades of American Prints: 1920-1940"; paintings by the little-known "Horatio Shaw (1847-1918)"; "Art for Architecture," photographs and studies of murals from the turn of the century in Washington; "Pennsylvania Academy Moderns," showing early twentieth-century modern painters from Philadelphia; and the "24th National Exhibition of Prints," a juried print exhibition sponsored jointly with the Library of Congress.

Exhibitions from abroad shown in the Renwick included "Contemporary Nigerian Art: Craftsmen from Oshogbo" and "Contemporary Textile Art from Austria," the latter produced in association with the Smithsonian Institution Traveling Exhibition

Exhibition view, "Academy: The Academic Tradition in American Art," National Collection of Fine Arts.



Service. Exhibitions sent to other countries through ncfA's Office of Exhibitions Abroad included Catlin's paintings of American Indians shown in the Middle East, "Calder's Circus" sent to the Far East, and "Variations on the Camera's Eye," an exhibition of recent paintings, circulated in South and Central America. "Made in Chicago," which circulated in South America, returned after a very successful showing in Mexico City and, expanded and provided with a new catalogue, was shown in Washington and Chicago.

Two exhibitions highlighted the year: "American Art in the Barbizon Mood" and "Academy." The first, directed by Dr. Peter Bermingham, Curator of Education, who wrote the authoritative publication accompanying the show, explored the work of those late nineteenth-century American painters who painted with the French painters in Barbizon or were attracted by the "Barbizon Mood." This, the first thorough look at these painters, who were shown here side by side with their French colleagues, proved revealing in both quality and variety.

The exhibition, "Academy," directed by Dr. Lois Fink, Curator of Research, and commemorating the founding of the National Academy of Design in 1825, was produced with the extensive cooperation of that institution. The 271-page publication, *Academy: The Academic Tradition in American Art*, is based on a new study of the Academy's records, which have now been microfilmed. Many paintings from the Academy's collection, unseen for years, were restored for the show.

The staff also has participated in professional activity outside the Museum. Several have juried exhibitions in various parts of the country and presented lectures either on the museum or in their special field. Mrs. Edith I. Martin of the Renwick Gallery was active in both the local and national organization of the National Conference of Artists. Miss Abigail Booth, who heads the Bicentennial Inventory of American Painting Before 1914, met with volunteer groups in many cities who are actively studying works in local collections at the behest of the Inventory. The Inventory is in touch with some 2500 individuals and agencies, and has now registered descriptions of 150,000 paintings. The museum's educational activities have been much studied by professionals from here and abroad, and, in August, Miss Margery Gordon of the education

staff spoke at the International Conference on Art Education in Split, Yugoslavia. Mr. Walter Hopps, Curator of Twentieth-Century Painting and Sculpture, lectured in Paris and Vienna and served on the jury of the Paris Biennial. Mr. Lloyd Herman, Director of the Renwick Gallery, spent several weeks in Europe visiting craft museums and discussing the possibility of future exhibition exchanges. Dr. Taylor lectured in various cities, conducted museum workshops in the Northwest, and spent two weeks in Caracas, Venezuela, lecturing and advising on the formation of a new gallery of national art.

National Museum of History and Technology

The collections of the National Museum of History and Technology, which touch on virtually every aspect of American life and history, have led the Museum in many directions as it prepares to commemorate the Nation's Bicentennial. In five major exhibits, two of which were recently opened, more than 22,000 objects will be displayed for visitors as part of the national celebration. Four of the exhibits will be on view in the Museum, and one, "1876: A Centennial Exhibition," will occupy the four bays and central rotunda of the Arts and Industries Building.

"Suiting Everyone," the Museum's first Bicentennial exhibition, was launched in September 1974. It chronicles the democratization of clothing in America through 200 years of evolution and revolution in design, production, and marketing. Demands for a traveling exhibit on the theme were so great that five duplicate copies were made, each now on a two-year tour. The range of the exhibition was further extended by an illustrated catalogue, written by Claudia Kidwell and Margaret Christman, and a handbook on costume conservation by Karyn Harris.

The project was a multidisciplinary effort, based upon two years of research by Mrs. Kidwell, coordinator of the exhibit, assisted by Donald Kloster, Assistant Curator of Military History, and Grace Cooper, Curator of Textiles. An Apparel Advisory Group made up of fashion designers, clothing manufacturers and retailers, and fashion editors assisted curators in the selection of the contemporary fashions shown. Some of the clothing on display was

acquired through a nationwide appeal for period clothing, which drew responses from 4500 Americans from California to Maine.

The exhibition is in four sections. The first, "Clothing for Somebody," contrasts the elegant fashions of wealthy eighteenth-century Americans with the simple, utilitarian homespuns worn by the majority of the people. The second and third sections, "Clothing for Anybody" (1800-1860) and "Clothing for Everybody" (1860-1920), trace the development of the "ready-made" clothing industry made possible by the Industrial Revolution. The last section, "Something for Everybody," presents the variety of clothing, textiles, and styles available to Americans over the past fifty years.

In addition to the clothing displayed, the early tools of textile manufacture and of the "ready-made" dress trade are shown, including Samuel Slater's original spinning frame and a model Eli Whitney made about 1800 showing minor adjustments to his original cotton gin. Later and more sophisticated machines, which speeded up production of textiles, fabrics, and designs, as well as factory machines for sewing, cutting, and pressing, are included. By the turn of the century, the American consumer was able to rely upon the "ready-to-wear" market for clothing for his entire family.

In early April, "Suiting Everyone" served as the focus for a two-day symposium on early American clothing manufacture, sponsored by the Costume Society of America.

With introspection befitting the Nation on its two-hundredth birthday, the Museum's second Bicentennial exhibition, "We The People," which opened on June 4, takes a reflective look at the American people and their government. Its title derived from the Constitution, the exhibit's three major sections explore the meaning of Lincoln's phrase, "government of the people, by the people, for the people." "Of the People" asks who we are as a people; "By the People" asks how we have governed ourselves; and "For the People" asks what we as citizens have asked of our government.

Seeking first to define Americans as a Nation, the exhibition opens with an exuberant display of symbols by which the United States is recognized around the world. "Of the People" also looks at the tools of census by which Americans have defined themselves

statistically since 1790. With the growth of the United States came stature as a nation among nations. Gifts presented to American presidents by many nations, on view in "Of the People," range from a pair of muskets inlaid with coral and gold presented to President Jefferson by the Emperor of Morocco to the famous "Resolute Desk" used at the White House by every president from Hayes through Kennedy.

The section on "By the People" illuminates the struggles of the disenfranchised for the right to vote. The pre-Civil War era saw voting by American immigrants, and the Civil War brought voting by Union soldiers and freed slaves, and resulted in the temporary disenfranchisement of Southern whites. Dramatizing the right to petition is a painted view of the East Capitol Steps, in front of which protestors march petitioning the Nation's legislators for social, economic, and political change. Its life-size scale makes visitors feel a part of historic protest movements. The first major

"We the People," a Bicentennial exhibit at the National Museum of History and Technology. View of the East Capitol Steps, in front of which protestors march petitioning the Nation's legislators for social, economic, and political change.



history in artifacts of the right to petition, the exhibit displays such present-day symbols of protest as a canvas-and-plywood hut from Resurrection City and a Vietnam War Veterans Against the War banner, with the familiar red shawl of women's rights advocate Susan B. Anthony, John Quincy Adam's abolitionist cane, and, from the Revolutionary era, a Stamp Act box which once carried the King's seals.

The Preamble to the Constitution, which broadly defines areas of responsibility the American people wished their government to assume, provides the basis for the final section, "For the People." Nineteenth-century America saw steady territorial expansion beyond the original states, beginning with the acquisition of the Louisiana Territory. The panoramic painting "Grand Canyon of the Yellowstone," by landscape artist Thomas Moran, suggests the vastness of the wilderness which awaited nineteenth-century settlers. Various objects tell the story of government exploration of new lands and government programs for settlement, culminating with twentieth-century explorations, exemplified by a lunar sample box which carried rocks collected on the moon's surface by Apollo 11 astronauts.

"We The People" was funded with a special appropriation from the Congress, and was researched and produced by Margaret Klapthor, Curator-in-Charge, and Herbert Collins, Curator, assisted by the able staff of the Division of Political History and the NMHT Office of Exhibits. The Hall was designed by the Washington firm of Staples & Charles. A catalogue accompanies the exhibit.

Three remaining Bicentennial exhibitions have been progressing rapidly, with the majority of the Museum staff redirected toward these endeavors. "American Banking," the Museum's first major exhibit on this vital aspect of American life, will open on September 17, 1975. This exhibition, made possible by a grant from the American Bankers Association, is being prepared under the direction of Dr. Vladimir and Mrs. Elvira Clain-Stefanelli, Curators of Numismatics, and designed by the firm of Joseph A. Wetzel of Stamford, Connecticut. The exhibit will be installed in the Museum's third-floor special exhibits gallery.

Almost 5000 objects—from buttons to buildings—have been assembled for inclusion in "A Nation of Nations," opening early in 1976. One of the largest exhibits ever produced by the Smithsonian, "A Nation of Nations" will tell of the early settlers and

later immigrants who populated the United States, making it a nation of many nations whose peoples created a diverse cultural heritage. Two period buildings have been installed and work has been started on two others. With the exhibit area already through structural alterations, work on individual exhibit cases is now underway. The design has been completed for approximately two-thirds of the exhibit. "A Nation of Nations" will impart a full array of museum experiences—original three-dimensional objects, graphics, posters, moving exhibits, music and sound effects, and audiovisual presentations. A team of twenty-two museum staff members are actively engaged in the development of the project under the direction of a committee chaired by Carl H. Scheele, Division of Philately and Postal History, and including Richard E. Ahlborn, Division of Ethnic and Western Cultural History; Grace R. Cooper, Division of Textiles; Harold D. Langley, Division of Naval History; Otto Mayr, Division of Mechanical and Civil Engineering; C. Malcolm Watkins, Department of Cultural History; and John H. White, Jr., Division of Transportation. The exhibit is being designed by the New York firm of Chermayeff and Geismar.

In 1975 virtually all collecting and design was completed for "1876: A Centennial Exhibition"—NMHT's microcosmic recreation of the Philadelphia Centennial slated for the restored Arts and Industries Building. Well over half the curatorial staff has been involved in "1876," with overall planning delegated to a committee comprised of Robert M. Vogel, Curator-in-Charge; Benjamin Lawless, the Museum's Assistant Director for Design and Production; William Miner, Project Manager; Nadya Makovenyi, Designer; and Robert Post, Historian. In February, Jon D. Freshour, formerly Registrar at the National Portrait Gallery, joined "1876" as Collections Manager.

Having completed restoration of an impressive array of century-old machine tools, the NMHT Technical Laboratory turned to a diversity of other large objects for "1876." Among the major projects were several field pieces from NAFMAB, and two Rodman Guns—one with a 15-inch barrel weighing nearly 25 tons—that once defended Chesapeake Bay; a Nasmyth forging hammer 22 feet high; a sorghum mill, grist mill, and wooden windmill; and a Brayton Ready Motor, an oil-burning, flame-ignition engine patented in 1874.

One of several projects ably handled by a group of volunteers headed by Lieutenant Commander Stanley Stumbo, U.S.N., was the restoration of an Otis steam elevator engine. A period freight platform is being rigged to operate in the West Hall of the Arts and Industries Building, thanks to a generous donation by the Otis Company in New York.

Important restoration projects include a steam locomotive built in 1876 by the Baldwin Locomotive Works for the Santa Cruz Railroad in California. Its acquisition ends a fifteen-year search by Curator of Transportation John H. White for an authentic American-type locomotive (4-4-0 wheel arrangement). Formerly owned by O. Roy Chalk, who had it on exhibit in a Washington playground, it was exchanged with a newer steam locomotive in May 1975. Refurbishing, under the direction of John Stine, includes fabrication of a new wooden pilot and cab.

A less awkward but equally difficult project was the restoration of hundreds of dental tools, surgical instruments, prosthetic devices, and pharmaceutical specimens undertaken by Michael Harris and Everett Jackson of the Division of Medical Sciences. In many instances, displays of these objects will be faithful replicas of Philadelphia exhibits a century ago.

A variety of objects representing foreign nations has been located by Anne Golovin. Herbert Collins and Peggy Bruton showed great resourcefulness in putting together exhibits representative of the states of the union, as did Deborah Warner in developing a miniature version of the Women's Pavilion. All in all, "1876" may well be the most diversified, evocative, and colorful exhibition the Smithsonian has ever done, and its opening next May is expected to be one of the outstanding events of our Bicentennial year.

Between major hall openings the Museum has produced a number of important temporary exhibits. Notable among these was the first showing anywhere of a selection of original folios from the long-lost Madrid Manuscripts of Leonardo da Vinci, on loan from the Spanish government. Arrangements for the loan and exhibition of these important manuscripts were initiated and carried forward by the Deputy Director of the Museum, Silvio A. Bedini. The manuscripts formed a portion of two volumes once part of the private collection of King Philip V of Spain. Codex Madrid I includes Leonardo's sketches of devices that were not to find application for



The National Museum of History and Technology has acquired a ninety-nine-year-old "American type" steam locomotive whose kind dominated the Nation's railways in the nineteenth century. Built in Philadelphia in 1876 as a wood burner, the engine is one of about 25 in existence today of the approximately 25,000 manufactured. The engine will be exhibited in "1876: A Centennial Exhibition."

many years, or that were to be reinvented centuries later. In this notebook, Leonardo also developed a systematic analysis of the concepts and elements of machines. Codex Madrid II is more of a daily notebook, with sketches and remarks covering a multitude of topics.

The manuscripts on display were written in Leonardo's curious "mirror" or reverse script. A number of objects from the Museum's collections were shown, together with several models, based on Leonardo's drawings, produced by International Business Machines. The exhibit was opened with a lecture by Professor Ludwig M. Heydenreich of Munich on "Visualized Knowledge," an interpretation of the Madrid codices. Following display at the Museum, the exhibition was loaned to the American Museum of Natural History in New York City for a brief showing at the American Association for the Advancement of Science meetings.

In "America Set to Music," a selection of songsheets from the collection of Mr. Lester S. Levy of Pikesville, Maryland, were displayed with objects in the Museum's collections suggested by the musical scores. The sheet music evoked vivid pictures of nineteenth-century American life, ranging in theme from national issues and politics to romance, fashion, parlor games, and popular sports for men and women. Some of the sheet music related to American

technological achievements, from the first drilling for oil to the invention of Bell's "Wondrous Telephone" and "Edison's phonograph." Notable cover illustrations were a striking lithography of two girls, orphaned by the Boston fire of 1872, pictured on the cover of "Homeless To-night, or Boston in Ashes;" humorous portrayals of the latest fashions; and a political cartoon for the song "Inflation Galop" which depicted a despondent President Grant in 1874 watching political opponents fill a huge balloon.

From January to May, the NMHT was host to "Steuben, Seventy Years of American Glassmaking," a traveling exhibition, organized by the Toledo Museum of Art, featuring more than 100 of Steuben's greatest accomplishments since 1903. Highlighted in the exhibit were major pieces which had served as gifts of state, such as the "Great Ring of Canada," America's gift to the people of Canada on that nation's centennial in 1967, and the "Merry-Go-Round Bowl" which President and Mrs. Truman presented to Queen Elizabeth II at her marriage in 1947.

Finally, construction was begun on the Hall of American Maritime Enterprises in which will be told the story of America's interaction with the sea from the colonial period to the Nation's emergence as a major sea power. The first exhibit for the new Hall, the 3-ton triple expansion steam engine of the United States Coast Guard tender *Oak*, was restored, rebuilt, and placed in the Hall, where it will provide the Museum visitor with an engineer's view of a ship's operating powerplant.

The Museum's popular Van Alstyne Collection of American Folk Art, which was removed from the second floor to make room for the "A Nation of Nations" exhibit, has been installed in new space on the first-floor rotunda and opened in time for the Festival of American Folklife.

A modest but unusual exhibit installed with virtually no cost, which drew impressive press and public comment, was the "Whatsit" case, a continuing display of a variety of objects, the identity of which had not been positively established by the Museum staff. These items had been assembled from the Museum's collections over a period of years, and comments solicited from the public led to positive identification of several of the objects.

The popular Frank Nelson Doubleday Lectures, *Frontiers of Knowledge*, continued to draw on the world's leading thinkers and



At the exhibition "Steuben, Seventy Years of American Glassmaking," Paul N. Perrot (right), National Museum of History and Technology's Assistant Secretary for Museum Programs, and Paul V. Gardner (left), Curator, Division of Ceramics and Glass, National Museum of History and Technology, admire *The Great Ring of Canada* (height: 40 inches), a unique creation of Steuben artists. Inscribed "For the People of Canada on the Centenary of Canada's Nationhood from the People of the United States of America," it was presented in 1967 to Prime Minister Lester Pearson by President Lyndon B. Johnson.

shapers of events to speak on themes reflecting the broad concerns of the National Museum of History and Technology. This year's series, "The Modern Explorers," looked at explorations made possible by twentieth-century advances in technology, from expeditions to the last untouched regions of earth to probes of the galaxies and, in some senses, the past. Speakers were New Zealand explorer Sir Edmund Hillary, British astronomer and mathematician Sir Fred Hoyle, a leading theoretician on the origin and nature of the universe, and Nobel Prize-winning American chemist Willard Frank Libby, discoverer of the radiocarbon dating technique. Biochemist and science fiction writer Isaac Asimov ended the series with a look at explorations yet to come, his topic being "The Moon as Threshold."

A special lecture sponsored by the Division of Electricity on

"Superconductive Energy Storage For Large Electric Power Systems" featured Professor H. A. Peterson who holds the Electric Utilities Chair in Power Engineering at the University of Wisconsin, Professor W. C. Young, and Professor R. W. Boom, all of the University of Wisconsin.

The continuing philatelic lectures presented in cooperation with the United States Postal Service featured four stamp issues; Greever Allan on "The Universal Postal Union 1874-1974"; Dr. Keith E. Melder on "The Chautauqua Centennial"; and Mr. Sinclair H. Hitchings on "Currier and Ives, and Their Art." Subsequent lectures looked at the stamp series "Contributors to the Cause," with speakers Dr. Lillian B. Miller and Mr. Rodney H. C. Schmidt, and finally the quartet of stamps issued by the Postal Service depicting "Military Uniforms of the American Revolution." Edward T. Vebell, designer of the stamps, was the evening's speaker.

The National Museum of History and Technology's one o'clock Tuesday Presentations offered a wide range of free films for the visiting public, as well as occasional lectures. Especially popular films included the prize-winning "Rube Goldberg . . . Or Doing It the Hard Way," produced by the Museum in conjunction with a past exhibit, and Charles Eames's shorts, "Tops" and "Toccatà for Toy Trains." Lectures ranged in theme from "Women Astronomers in America" and "The Evolution of the Drug Store" to "Restorations for the Smithsonian's Centennial Exhibition," about the readying of heavy machinery from America's early industrial age for viewing in the Bicentennial retrospective, "1876: A Centennial Exhibition."

The National Museum of History and Technology's Division of Public Information and Education recently completed its first year of independent existence following decentralization of the Smithsonian's Office of Elementary and Secondary Education. Responsible for educating and informing the public about the Museum, the Division has continued regular school tours and greatly expanded its offerings of prescheduled and walk-in programs for other museum visitors.

During the 1974-1975 school year (October through May), 155 volunteer docents specializing in varied interest areas such as Colonial Experience, Energy, Transportation, and Needlework con-

ducted school tours for 26,855 students, 212 Outreach programs in area schools, and 1557 tours for general visitors. In addition, another group of docents conducted 380 Highlights Tours for weekend visitors. In all, more than 60,000 people had the opportunity to participate in the Museum's docent-conducted educational program.

New tours in "Suiting Everyone" have been added and other tours, such as "Newsmaking," "Medical Sciences," and "Technological Change," have been modified to appeal to the walk-in audience.

A new feature of the Educational Program has been the Spirit of 1776 Discovery Corner located in the Armed Forces Hall. Within this area docents offer short presentations while encouraging visitors to touch and handle artifacts relating to the common soldier in the American Revolution. This exhibition served 3395 visitors in 178 sessions during its first six weeks of operation. Other "discovery corners" are planned to bring the visitor into contact with the Museum's wide-ranging collections.

During the summer of 1974, the Division and the NMNH's Office of Education participated with the D. C. Public Schools in a Title I enrichment program designed to bring museum experiences into the classroom. Museum-trained high school students presented "touch-it" talks relating to colonial America and natural history to elementary school students, giving children the opportunity to handle and examine related objects.

The Division also worked with the Office of Elementary and Secondary Education to provide workshops for area teachers. From these programs have come greater cooperation and understanding of the needs of the local schools.

This year the Museum was called upon to repair the ceremonial mace of the House of Representatives. Under the supervision of Mr. Robert M. Organ of the Conservation-Analytical Laboratory, the historic mace was examined and repaired by Mr. Robert Klinger and Mr. Donald Holst of the Office of Exhibits Model Shop. The mace, not originally designed to stand upright, when first presented to the House of Representatives 133 years ago, was altered so that it could stand upon a marble base when the House was in session. In the course of the years the tenon fitting into the marble had loosened. Repair included replacing the original wooden



Robert Klinger with ceremonial mace of the House of Representatives which was repaired in NMHT's Office of Exhibits Model Shop.

core with a bronze rod. None of the structural repairs altered the outer appearance of the mace, which was further cleaned and refurbished, and shortly returned to the House.

Additions to the collections of the National Museum of History and Technology were numerous and varied, ranging from thirty-seven grain testing devices for the Division of Agriculture, an 1898 single truck street car and 1892 cable car trailer for the Division of Transportation, to an early nineteenth-century orchestral horn by Courtois of Paris and a gourd fiddle from St. Mary's County, Maryland, for the Division of Musical Instruments. The Division also arranged for a long-term loan of a harpsichord by Joseph Johannes Couchet, dated 1679.

In the Division of Political History, the generous gift of approximately 15,000 more objects relating to political campaigning from Mr. Ralph E. Becker brings together the entire Becker collection. Combined with more than 4000 objects from the Honorable Michael V. Disalle and 665 objects from the estate of the late



Presentation of Rush Tray to the Smithsonian, February 1975, in the Secretary's Parlor, Smithsonian Institution Building. Left to right, Colonel Benjamin Rush III, Curator Anne Golovin, Curator James M. Goode, and Mrs. Benjmain Rush II.

William F. and Edith R. Meggers, the Museum's collection of political campaigning memorabilia becomes not only the largest but the most important in the country. A large number of these new acquisitions are featured in the exhibit, "We the People."

Among the most important single items acquired was a Chinese export porcelain bowl decorated with the insignia of the Order of the Cincinnati from the set purchased by General George Washington in 1786. Continuously owned by Washington's descendants to the present, the bowl has been on loan to the Museum since 1916.

The Division also acquired an engraved silver platter inscribed to Dr. Benjamin Rush in 1798 for his services to Philadelphia's City Hospital during that year's yellow fever calamity. America's leading physician until his death in 1813, Dr. Rush, signer of the Declaration of Independence, was Surgeon General during the American Revolution. His son, Richard, who inherited the platter, was Minister to France and England, and was instrumental in ob-



Chinese export porcelain bowl, decorated with the insignia of the Order of the Cincinnati, from the set purchased by General George Washington in 1786, acquired by the Division of Political History, National Museum of History and Technology.

taining the bequest which established the Smithsonian Institution. The tray is the work of Philadelphia silversmith John Myers, and was donated to the Museum by Mrs. Benjamin Rush and the late Mr. Rush, a sixth generation descendant of the doctor.

Among the 331 pieces of ceramics and glass acquired by the Division of Ceramics and Glass were two extremely rare pieces of early Chelsea porcelain, 1745–1752, an American porcelain vase made for the Philadelphia Centennial Exposition of 1876, and rare pressed glass made in Wheeling, West Virginia, late in the nineteenth century.

Notable acquisitions for the Department of Cultural History include a pair of painted Hepplewhite-style side chairs of a Philadelphia type predating 1800, an Empire-style wardrobe of the 1830s with the label of Joseph Meeks and Sons of New York City, and two fine eighteenth-century side chairs from New York.

An important addition to the Museum's Warshaw Collection of Business Americana was a gift of the New York advertising firm, N. W. Ayer ABH International, of more than 400,000 proofs of advertisements published in newspapers and periodicals between 1889 and 1960, including the firm's first advertisements of the



A rare American porcelain vase, of a type especially produced for the 1876 Centennial by the Union Porcelain Works of Greenpoint, Long Island. Height: 21¾ inches. National Museum of History and Technology.

Model A Ford. A selection of early telecommunications and computing devices and electronic components was presented to the Division of Electricity by Akio Morita, founder and president of Sony Corporation, among them the first transistor radio manufactured in Japan and the world's first transistorized portable videotape recorder.

The Division of Medical Sciences obtained a large collection of obstetrical forceps representing two centuries of development, and a large variety of American dental office equipment and tools as well as a homeopathic pharmacy including fixtures. The Division of Electricity and Modern Physics acquired a nuclear adiabatic demagnetization apparatus and an atomic beam apparatus, soon to be exhibited, while the Division of Mechanical and Civil Engineering's acquisitions ranged from Helen Keller's gold touch watch to a collection of approximately 14,000 drawings from the former Southwark Machine Works of Philadelphia, representing that firm's activities as a major nineteenth-century machine builder from circa 1880 to 1910.

During the past year, the Museum has branched out more actively into academic realms with the establishment of new centers of learning and fellowship opportunities designed to make it a living museum. With the decentralization of the staff of the National Armed Forces Museum Advisory Board, two of its members have joined the staff of the recently established Dwight D. Eisenhower Institute for Historical Research, which has sponsored several important conferences and meetings.

In April the Institute served as host at the Smithsonian for a conference with representatives of various Federal agencies and services to establish the historic vessel, *Monitor*, as a marine sanctuary. In April a meeting sponsored by the Institute and held in the Museum brought together representatives of the Ford Foundation, leading television corporations, telecommunications experts, historians, representatives of the Library of Congress, the National Archives, and the National Education Association. The purpose of the meeting, which was chaired by Dr. Eric Barnow, was to suggest guidelines for preserving television footage which would save vital materials for future historical purposes.

The Institute will sponsor the annual meeting of the International Commission of Military History, to be held at the Smith-



Helen Keller's gold touch watch and case.
National Museum of History and Technology.

sonian in August 1975. Dr. Pogue, chairman of the committee on organization that wrote the constitution of the United States Commission, has served as a member of the executive committee, and was one of the trustees to sign the charter for the United States Commission in the spring of 1975.

The Institute has announced plans for three conferences on United States occupation policies to be held under its sponsorship at the MacArthur Memorial Library, in Norfolk, Virginia; the Marshall Research Foundation of Lexington, Virginia; and at the Smithsonian Institution. Dr. Pogue has been working with planning committees of the cooperating institutions.

A new position of Visiting Scholar was created to bring to the Museum a succession of eminent historians and individuals of distinction in the museum world to pursue their own research and to

serve the Museum in an advisory capacity. The first appointee was Dr. A. Hunter Dupree, on sabbatical leave from Brown University, where he has been the George L. Littlefield Professor of History since 1968. Prior to his appointment to the Brown University faculty, Dr. Dupree was a Fellow of the Center for Advanced Study in the Behavioral Sciences at Stanford, California, and previously in the History Department of the University of California at Berkeley. Author of *Science in the Federal Government* (1957) and of a biography of *Asa Gray* (1959), Dr. Dupree is Secretary of the American Academy of Arts and Sciences. During his six-month appointment at the Museum, Dr. Dupree continued his research on the history of premetric measurement, and served as an advisor on the Museum's plans for a new Hall of American Science.

In 1974 Dr. Robert P. Multhauf, former Director of the Museum and presently Senior Scientific Scholar, was elected by the National Academy of Sciences to chair the American delegation to the XIVth International Congress of the History of Science held in Tokyo and Kyoto, Japan, in August.

Seven Smithsonian fellows were appointed in the National Museum of History and Technology during fiscal year 1975, and developed research on various projects related to the Museum's interests. Among the predoctoral candidates, James A. Borchert of the University of Maryland conducted research on American mini-ghettoes, alleys, alley dwellings and alley dwellers in Washington during the period from 1850 to 1970. Mark Lindley of Columbia University has been at work on organological aspects of keyboard temperament, and Philip T. Rosen of Wayne State University conducted a study on the search for order: radio broadcasting in the 1920s. The postdoctoral fellows included Stanley Goldberg of Harvard University who is conducting research on the social character of science in Germany and America in the late nineteenth and early twentieth centuries; Kenneth J. Hagan of Claremont College who worked on American naval diplomacy 1845-1861; and Bernard Mergen of the University of Pennsylvania whose work is on shipbuilding and shipbuilding labor 1917 to 1933. William J. Simon of the City University of New York developed a study of the Ferreira Expedition in Brazil and its contributions on the natural history of Brazil in the late eighteenth century.

A Committee on Academic Activities, under the chairmanship

of Walter F. Cannon, has been established and is charged with responsibility for developing the Museum's Fellowship program and plans for a variety of professional relationships, including teaching activities by staff members in colleges and universities, scheduling of seminars in the Museum, and staff exchange programs with other museums.

One of the most important academically related events was the gift to the Museum of the Dibner Library of the History of Science and Technology. This collection contains from 20,000 to 25,000 published works, including a great number of rare books, more than 300 incunabula, and a large number of historic manuscripts and letters of important scientists. Included also in the gift are approximately 800 portraits in the form of prints and engravings, as well as collections of science medals and scientific instruments and apparatus.

The Dibner Library will be temporarily housed in a special facility under construction on the Museum's first floor, where it will be used by visiting scholars and students and the Museum staff. The Museum foresees future expansion of the Dibner Library as other collections in specialized aspects in the history of science and technology are acquired. The Dibner Library represents the major holdings of the Burndy Library in Norwalk, Connecticut, which will continue to function as a resource for study for the Connecticut-New York region with a full collection of research materials, consisting primarily of duplicates presently in the collection and copies of the more important materials transferred to the Museum.

The core of the collection consists of the 200 books which were epochal in the history of the physical and biological sciences, and which proclaimed new truths or hypotheses which redirected scientific thought, brought understanding of natural laws, and at times introduced industrial change. Notable among the treasures are a manuscript copy, circa 1385, of the *Physics* of Aristotle, several manuscripts of Sir Isaac Newton's including a quarto on chemistry, and a large manuscript leaf of Darwin's *Origin of Species*, one of only ten that have survived. The copy of Copernicus's *Narratio Prima* (1540) sent by Rheticus to Schoener is featured in the collection, as well as a copy of Pliny's *Historia Naturalis* (Venice 1469), which was the first book on science to



be printed. Among the treasures are also a manuscript of Cecco d'Ascoli dated 1461 presenting his views on the natural history of the world, an autograph letter from Galileo Galilei to Nicolas Claude de Peiresc dated 1635 describing the invention of a magnetic water clock, and forty letters written by Michael Faraday. Included also is the Armin Weiner Collection of more than 1000 manuscripts and correspondence of many of the world's foremost scientists, including Regiomontanus, Kepler, Boyle, Euler, Priestley, Fraunhofer, Mach, and Planck. Featured is a collection of more than 100 of Louis Pasteur's own copies of his publications, numerous autographed scientific notes and letters, and his laboratory microscope.

The donor of the Library, Dr. Bern Dibner, founded the Burndy Corporation in 1924 and the Burndy Library in 1936. He has long been recognized as a leading collector of source material on the history of science, and, as Director of the Burndy Library since its founding, has patiently assembled the more than 40,000 works which form its collections and which make it one of the largest single collection of books in this subject field.

Facing page:

Rembrandt Peale, *Martha Washington and George Washington*, ca. 1853, oil on canvas. Height: 36 inches; width: 29 inches. Gift of an anonymous donor to the National Portrait Gallery.



Right:

Elisha Hammond, *Frederick Douglass*, oil on canvas. Height: 26 inches; width: 17½ inches. National Portrait Gallery.

National Portrait Gallery

The affairs of the National Portrait Gallery (NPG) revolve around acquisitions and exhibitions. Although the Gallery's permanent collection (which now includes more than 800 portraits) has grown significantly since acquisitions were first actively pursued a decade ago, the primary objective of the Gallery continues to be the building of a collection worthy of this Nation's history.

During the past year, sixty portraits came to the Gallery by gift and purchase. Clearly the most important of the gifts were "port-hole" portraits of George and Martha Washington (so-called because they were painted within *trompe l'oeil* architectural ovals) by Rembrandt Peale, presented by an anonymous donor. Also worthy of special mention are a pastel portrait of Gouverneur Morris by James Sharples, given by Miss Ethel Turnbull; an oil sketch of Cyrus McCormick by Charles Loring Elliott, the gift of The Chauncey and Marion Deering McCormick Foundation and Mrs. Anne B. Harrison; and a bust of William Lloyd Garrison by Anne Whitney, presented by Lloyd Kirkham Garrison.

The most noteworthy acquisitions by purchase were portraits of two great Chief Justices of the United States; a three-quarter-length oil of John Jay, begun by Gilbert Stuart and finished by John Trumbull; and a small, cabinet-size canvas of John Marshall by William J. Hubard. The Gallery also acquired by purchase one of only two known life portraits of Frederick Douglass. The portrait was painted in 1844 by Elisha Hammond, a member of a utopian community in Florence, Massachusetts, visited by Douglass. Extraordinarily evocative life masks of Helen Keller and her teacher Ann Sullivan Macy, made in 1916 by the sculptor Onorio Ruotolo, also were acquired by purchase.

The Gallery's exhibition program focused primarily on the Bicentennial with two extensive displays, "In the Minds and Hearts of the People, 1760-1774" and "The Dye is Now Cast, 1774-1776," each containing some 250 portraits and objects of other kinds. Full-scale catalogues (of 240 and 344 pages, respectively) accompanied each of these exhibitions, and materials specially intended for secondary school students were prepared by the Gallery's Education Department. The Gallery also mounted a special exhibition for the Archives of American Art entitled "From Reliable Sources," consisting of letters, documents, and photographs from the Archives' collections. The 761 St.-Memin portrait engravings given the Gallery last year by Mr. and Mrs. Paul Mellon were installed in a gallery permanently set aside for the collection. A number of small exhibitions were also mounted, including one on John Brown and two devoted to the centennials of the births of Herbert Hoover and Winston Churchill.

A replica by Gardner Cox of his portrait of Dean Acheson in the State Department was presented to the Gallery by Secretary Acheson's former law partners. Secretary of State Kissinger and Averell Harriman were among the speakers on that occasion.

The long-anticipated work on the Papers of Charles Willson Peale and his Family was begun this year under the editorship of Dr. Lillian B. Miller and with an initial two-year grant from The National Endowment for the Humanities.

Finally, through the generosity of an anonymous donor, the Gallery acquired a British double-decker bus, which transports visitors to the National Portrait Gallery from the front door of the National Museum of History and Technology on the Mall, hourly, seven days a week.



Stuart Trumbull, *John Jay*, oil on canvas. Height: 50½ inches; width: 41½ inches. National Portrait Gallery. Below: Secretary of State Henry Kissinger addressing the guests on the occasion of the presentation of Gardner Cox's portrait of Dean Acheson to the National Portrait Gallery, September 17, 1974. The portrait is the gift of Covington & Burling to the Gallery.



Office of Academic Studies

The Office of Academic Studies, with policy direction of the Institution's Board of Academic Studies, develops and administers Smithsonian programs in higher education. These programs are designed to provide a regular flow of ideas and information between the research faculty of the Institution and the international academic community. Students at all postsecondary levels are offered the opportunity to receive individual training and guidance in the Smithsonian's research centers.

Predoctoral and postdoctoral fellows are appointed to pursue advanced research training in those scientific and scholarly disciplines studied by the faculty of the Smithsonian. They bring with them a provocative and stimulating enthusiasm, providing a constant leaven in the intellectual life of the Institution. Predoctoral fellows usually spend one year consulting the faculty and collections while completing dissertations for the doctorate. Postdoctoral fellows study closely with their advisors to expand and strengthen their university training. During the year 1974-1975, twenty-two predoctoral and twenty-three postdoctoral fellowships were awarded to advance the Institution's research and the intellectual development of the fellows.

Graduate and undergraduate fellowships are awarded each year to students who require an opportunity to spend two to three months of directed research at the Institution. These shorter term fellowships are awarded primarily to graduate students who have not yet begun work on a dissertation. A period of consultation and exposure to research methods allows students to comprehend the broader discipline within which they are studying and to focus their interests toward individual research projects. In 1974-1975, seventeen students were awarded fellowships under this program. Three of these students were supported under a grant from the National Science Foundation.

An increasing number of colleges and universities recognize the value of off-campus study at the undergraduate level. This recognition is most often given in the form of academic credit awarded at the completion of a successful work project. Students conducting such projects are able to learn fundamental principles of scholarly and scientific disciplines while working under the direction of a Smithsonian staff member. The mutual benefit of such an ex-

periential education program attracts a growing number of students each year. In 1974–1975, twenty students from across the country studied under this Museum Study Program at the Smithsonian.

To complement these programs the Office of Academic Studies attempts to assist other individuals who desire a shorter period of study at the Institution. A Short-Term Visitor Program offers modest financial support to visitors at all academic levels who wish to consult staff members for a few days or weeks in the pursuit of their research problems. By offering this modest support to supplement the visitor's own resources, this program provides many opportunities for individuals to conduct necessary research at the Institution. In 1974–1975, twenty-seven visitors were offered support under this program. Additionally, a Seminar Program offers Smithsonian research faculty the opportunity to organize seminars at the Institution. These seminars are designed to bring together distinguished scientists and scholars and students from around the world to discuss ideas and concepts of common interest. During fiscal year 1975 two such seminars were supported. Dr. Olga Linares conducted a seminar on Barro Colorado Island on the social transition from hunting-gathering to agriculture in the tropics as inferred from present-day replication experiments. The ten participants included two scientists from Venezuela and one from Colombia. Dr. Richard Baumann, entomologist at the National Museum of Natural History, organized and chaired The Fifth International Symposium on Plecoptera. The thirty participants included visitors from Germany, Canada, Norway, New Zealand, Yugoslavia, India, and Japan.

In addition to Institution-wide programs in higher education described above, the Office of Academic Studies frequently assists in planning and administering programs developed by the research bureaus of the Institution to meet their special needs, and offers advice on a wide range of higher education matters.

A decade has passed since the inception of these formal education programs. During this exciting formative period some 950 students have been appointed to study in the Institution's research centers. Many more have been supported for short-term research and seminar participation. The impact of these students upon the intellectual life here is evidenced by the continuing professional relationships which have developed. Undergraduate and graduate students have frequently returned to the Institution both formally

and informally. Many predoctoral and postdoctoral fellows have established a close collaborative relationship with their Smithsonian colleagues, often co-authoring papers with them and spending extended periods of research at the Smithsonian. These on-going collaborative efforts have assisted in the continuing expansion of the Institution's international network of scientific and scholarly communications.

Office of American Studies

The American Studies Program continued its association with The George Washington University, the University of Maryland, and other institutions in the Washington area. Twenty-five graduate students participated in the fall seminar in "Material Aspects of American Civilization," taught by the Director with the assistance of Arthur Townsend, Executive Secretary of the Maryland Historical Trust, and Smithsonian staff members.

In the spring semester, twelve graduate students enrolled in the seminar in "Vernacular Architecture of Colonial America" taught by Smithsonian Research Associate Cary Carson, Coordinator of Research and Architectural Historian of the St. Mary's City Commission; nine students enrolled in the seminar in "Early American Decorative Arts" taught by Research Associate Patrick Butler; seven students enrolled in "Studies in American Art and History" taught by Lillian B. Miller, Smithsonian Historian and Editor of the Charles Willson Peale Papers; and five students enrolled in "The Art and Architecture of Washington, D. C., 1791-1929" taught by Michael Richman of the National Trust for Historic Preservation.

As in past years, a Work-Study Program in Historical Archeology, offered by the St. Mary's City Commission in cooperation with the American Studies Program of the Smithsonian Institution, The George Washington University, and St. Mary's College of Maryland, was held from June 16 to August 22, 1975. In addition to these formal seminars, supervision of individual reading and research projects, thesis direction, and preparation of comprehensive examinations were undertaken by the Director and cooperating Smithsonian staff members.



Students in Dr. Cary Carson's American Studies Program class, "Material Aspects of American Civilization: Vernacular Architecture," taking measured drawings of the Smithsonian Institution's Belmont House during weekend field trip, March 21-23, 1975.

The Director spent the month of February as Regents' Lecturer at the University of California, Riverside. While in California, he presented a paper on "The Clash of Morality in the American Forest" at a conference on "The First Images of America: The Impact of the New World" at the 21st Annual Meeting of the Renaissance Society of America which was held at the University of California, Los Angeles.



The bronze portrait statue of Secretary Joseph Henry as it appeared about 1885, shortly after it was erected in front of the west wing of the Smithsonian "Castle" in the Institution's park. The Conservation-Analytical Laboratory is concerned with the problems of combatting the deterioration of such statues.

MUSEUM PROGRAMS

PAUL N. PERROT, ASSISTANT SECRETARY

IT HAS BEEN A TEMPTING CLICHE in the last few years to refer to the changing roles of museums and to suggest, by inference, that somehow museums in the past, if they had not betrayed their contemporary public, at least had been woefully deficient in providing a meaningful service to society. True, since World War II, museums have gone through a period of tremendous growth. Their numbers have proliferated, their audiences have doubled, redoubled, and doubled again, and they have been called upon to provide new and different services to the general public. They have become increasingly aware of the key and unique role they can and indeed do have within the educational fabric of society. Through increasingly flexible programs they have been able to reach segments of our population for whose forefathers museums were often unapproachable monuments. Increasingly, they have become vehicles in which the self-motivated can explore new horizons, and refresh dim memories of early school days. They now provide building blocks for an understanding of new relationships between ideas, things, phenomena, and facts. In the most meaningful sense, museums have become the ideal vehicles for continuing education. They create a milieu in which, with no other compulsion than curiosity and delight, new meanings can be found for the commonplace and where a constantly shifting society can somehow graft itself to a historic continuum which bridges the centuries and spans hemispheres.

Hence we can commend ourselves for the progress that museums have made and the acceptance they are receiving from society, but

as we do so it is easy to overlook that unless museums continue to be museums in the most traditional sense of the word their ability to provide these other services will atrophy.

What then is a museum? In essence it is an institution which collects and studies the tangible remains of the past, presents and interprets them for the information and delectation of the present, and conserves and transmits them for the future. If this definition is accepted, it follows that the museum is above all an institution concerned with the past whose primary relevance to the present is that it makes the past come to life in such a way that the present will leave a richer legacy for the future.

The capacity of the museum to transmit this legacy is predicated on a variety of factors: (1) the manner in which it cares for its collections; (2) the system it develops for their registration, for assembling and cross-referencing the information that is either contained in the objects or which has been accumulated about them; (3) the care with which it houses them, researches their material nature and develops the necessary conservation measures designed to mitigate the unavoidable effects of time; (4) the research and interpretive materials that bolster these investigative processes, i.e., libraries and archives; and (5) the steps it takes to present the collections in the most successful way so as to educate the largest public to the importance of a past, which enriches the present for the benefit of the future.

It is to these more traditional, but indispensable, aspects of museum management that the Office of Museum Programs is dedicated.

In virtually all areas the task is monumental. The Smithsonian has huge collections, virtually all of which are important not only because they are good but because they are large—their variety enables the scholar, in many cases, to study the variants and characteristics which are key elements in developing scientific classifications, and in understanding stylistic evolutions. The larger the collections, the greater are the problems of conservation, classification, retrieval, study, and storage and the larger the task for those units that provide the tactical or logistic support.

Yet in their areas of prime concern, Office of Museum Program units, in spite of budgetary leanness, have made progress. Fiscal year 1975 was marked by improved cataloguing, ordering, and

retrieval procedures in the Libraries. This has resulted in shrinking a backlog accumulation of several years' duration. A program was developed to care more efficiently for rare books and plans were made to house the scholarly rich and visually spectacular Dibner Collection.

The Smithsonian Archives have developed plans to attain and maintain intellectual control over the tremendous outpouring of documents which must be retained for historical purposes. Oral history has become part of the data-gathering arsenal and important personal insights have been gained by interviews of senior Smithsonian personnel.

The Conservation-Analytical Laboratory, still facing thousands of man-years of work, has been given additional, if still inadequate, space, and has recruited actively additional conservators from the very few that come into the profession annually. The foundations are laid for smoother and more speedy output in 1976.

The Smithsonian Traveling Exhibition Service virtually doubled in size and is readying about fifty new exhibitions a year in addition to coordinating an important series of exhibitions being lent to the United States under the "International Salute to the States" program, funded by the American Revolution Bicentennial Administration. By 1976 over two hundred exhibitions of all kinds will be in circulation to museums and other organizations throughout the Nation and it is expected that the number and quality will continue to grow as demands and needs from all parts of the country show no sign of abating.

The Office of Exhibits Central, after a time-consuming reorganization, was consolidated in new facilities, without substantial loss of productivity, and from its specialized facilities made major contributions to the exhibit efforts of NMHT, NMNH, SITES, and nearly all bureaus. The Motion Picture Unit again received awards for the excellence of its productions.

The Office of Museum Programs strengthened its coordinating and training capabilities by adding a highly experienced member to its staff. Mrs. Jane Glaser, former Director of the Charleston (West Virginia) Children's Museum, was named Manager of Training Activities. Under her direction the workshops on museum management will be expanded, and special training programs will be developed, with emphasis on the special needs of the Indian com-

munity. This office will also serve as the focus for rendering assistance to museum professionals who seek guidance and/or training from the Institution. The long announced series of slide-tape lectures on conservation practice were put successfully into circulation and the finishing touches completed on over one-half of the series of video-taped lectures on the chemistry of conservation by Dr. Robert Organ, Chief of the Conservation-Analytical Laboratory.

A study on visitor orientation at NMHT, conducted by Dr. Gary H. Winkel, of the City University of New York, with staff assistance, was completed, and the first part of an analysis of *The National Museum of Natural History as a Behavioral Environment* by staff member Robert Lakota was readied.

The renovation of the Arts and Industries Building entered in its decisive phase during the year. An extensive air-conditioning plant was installed and work started on restoring the main halls to the colorful, uncluttered appearance they had when the building opened in 1871. Simultaneously the NMHT staff completed the design of the special exhibition commemorating the Philadelphia Centennial Exposition of 1876, and which is expected to open in the Arts and Industries Building on May 10, 1976. Both the building and the exhibition will give visitors a unique opportunity to gain an insight into the boundless energy and happy exuberance which characterized the Centennial and the following decades.

The well-known architect, Hugh Newell Jacobsen, was retained as consultant for the aesthetic aspects of the renovation.

The National Museum Act administrative staff was reorganized and new procedures developed to better serve a growing number of applicants and grantees. The strengthened program in conservation, research, and training was well received. As in years past, the number of applications found worthy of funding was considerably larger than the funds available. The increasingly large numbers of reports and research papers produced by grantees were examined and, wherever this seems of use to the museum community, the results will be issued in summary form. New and more explicit guidelines were prepared to announce the 1976 grant programs.

From an administrative standpoint, a major and felicitous event occurred in the Office of Museum Programs when Mr. William N. Richards became Executive Assistant to the Assistant Secretary.

Mr. Richard's long experience in museum and governmental matters as Director of the Bureau of Museums for the State of Pennsylvania has, in the short time he has been with this office, already proved invaluable, and his guidance has been especially helpful in developing the revised procedures for the National Museum Act.

In the management of the activities reported on above and in others, the Assistant Secretary for Museum Programs participated actively. In addition, he served as the Institution's designee on the Advisory Council for Historic Preservation, as Vice President of the American Association of Museums, Vice President of the International Council on Museums, and Vice President of the International Centre for Conservation in Rome and United States Delegate to its General Assembly.

Conservation-Analytical Laboratory

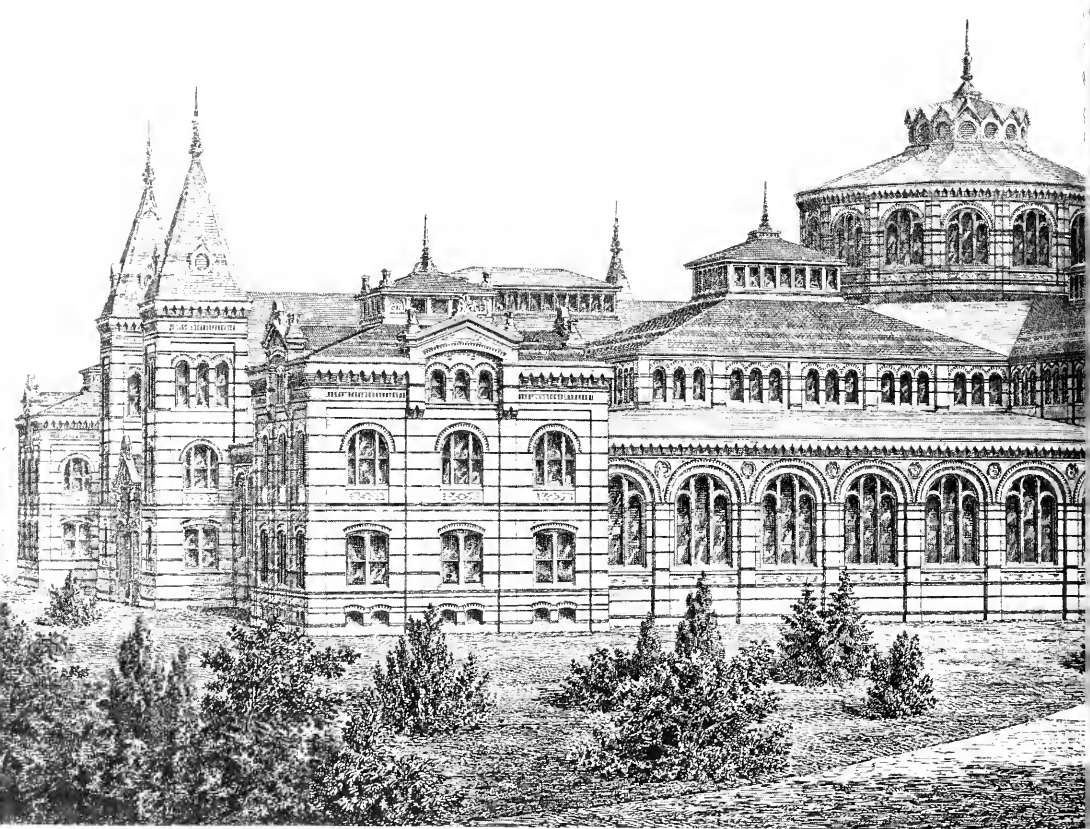
The activities of the Conservation-Analytical Laboratory (CAL) support conservation and research in many areas of the Smithsonian. An average of thirty Divisions in any one year call on CAL for conservation and analytical services. This year these services have been severely hampered by construction work in the Laboratory and by delays in refining new computerized methods for more expeditious usage.

A joint project with the Brookhaven National Laboratory has resolved a long-standing analytical difficulty in radiocarbon dating from small samples.

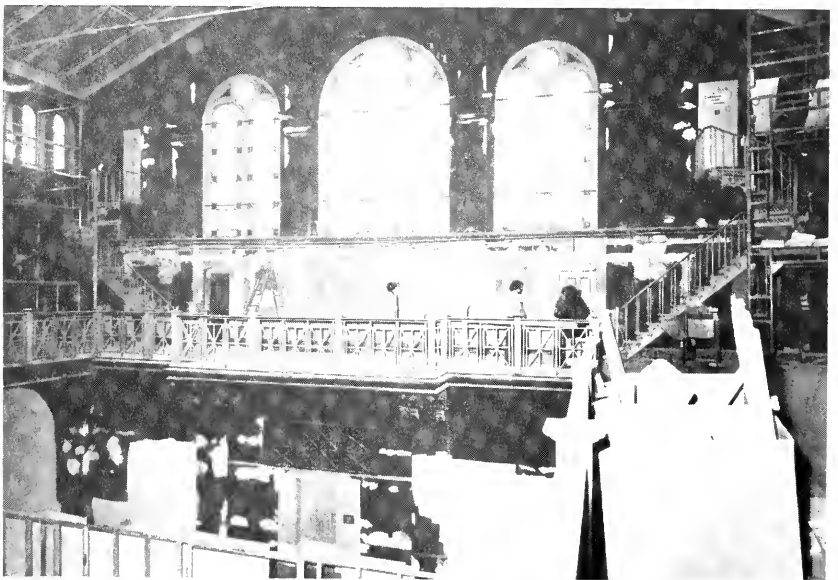
Equipment for thermoluminescence dating of ceramics has been acquired and a scientist is being sought to operate it.

A large variety of projects were carried out. A few examples follow. For the National Museum of Natural History: A string of eleventh-century A.D. marbled beads, said to be from Mauritania, was found to be made of pyroxene mineral when examined by x-ray diffraction and other techniques.

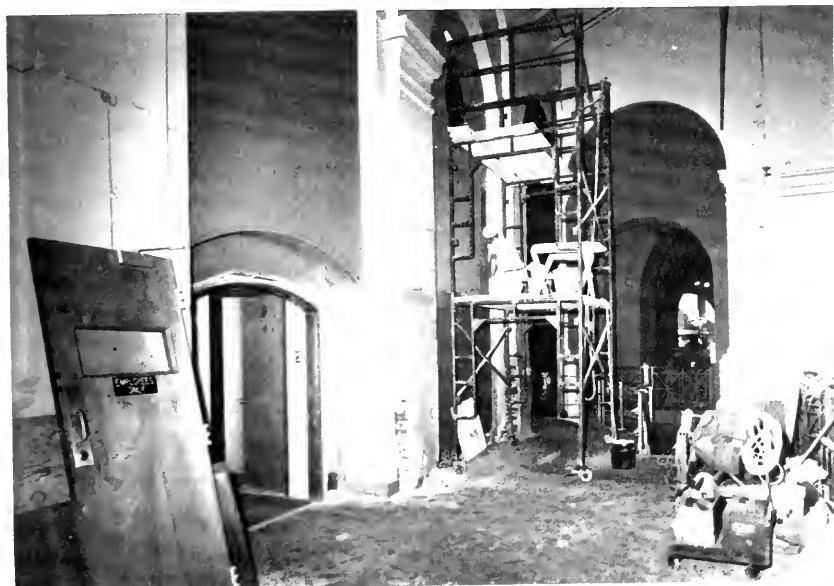
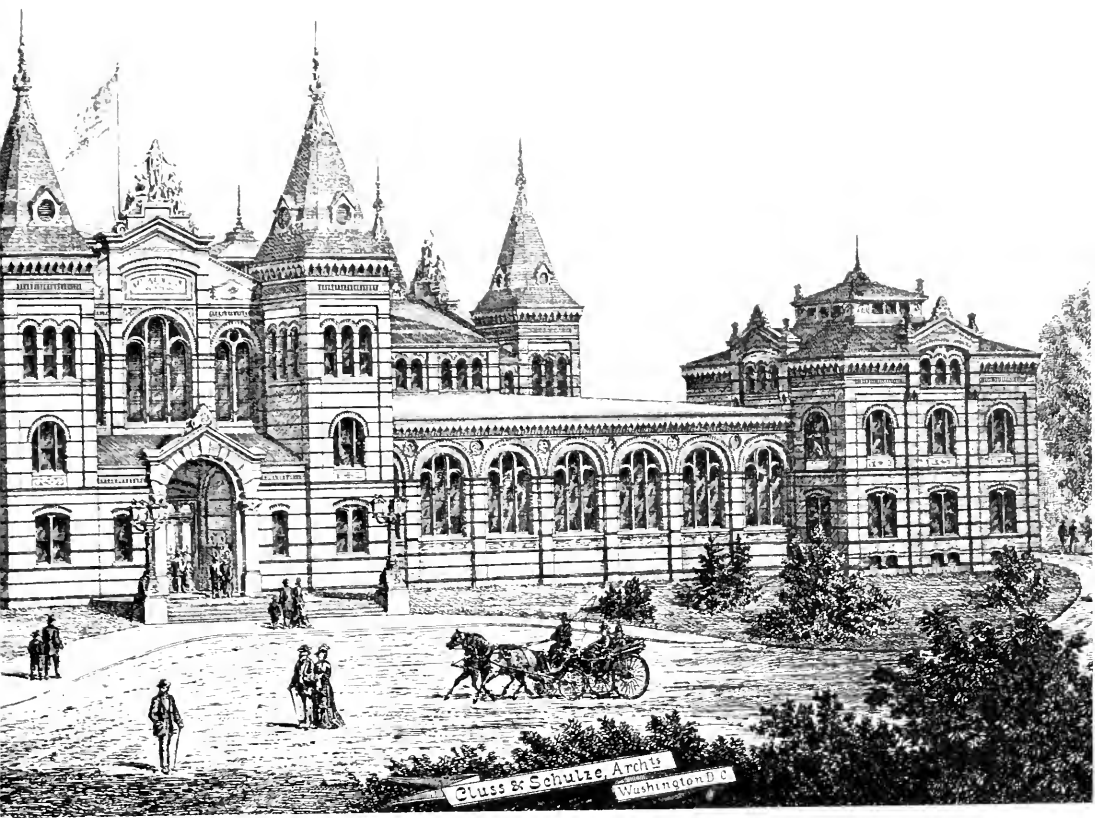
For the National Museum of History and Technology: Mortar from a brick cookstove of the privateer brigantine *Defense*, a warship of the period 1776, was analyzed by microscopy and infrared spectroscopy to determine its composition for comparison with mortars found in other comparable ships.



The Arts and Industries Building.



Careful restoration is returning the interior of the Arts and Industries Building to its original 1881 appearance, preparatory to the recreation of the Philadelphia Centennial as a Smithsonian exhibition celebrating the Bicentennial of our Nation's birth.



A major phase of the restoration work in the Arts and Industries Building is completed as plans go forward for the Bicentennial exhibition, "1876: A Centennial Exhibition," which will be shown there.

Analytical studies of pottery from Spanish Colonial sites and of medieval glass by neutron activation methods, evaluated by multivariate statistical analysis, are still in progress.

Activities in conservation have been numerous. Methods for the cleaning and consolidation of the ceremonial mace of the House of Representatives were recommended, and a considerable contribution was made toward the cleaning, polishing, and preparation of over thirty bronze and marble sculptures for the opening of the Hirshhorn Museum.

An imitation bronze plaster cast sculpture, donated in 1919 by the Yugoslav artist Branko Oeskovic (1883–1939) to President Woodrow Wilson, has been restored for the National Collection of Fine Arts. As a good-will gesture, it is soon to be given by the United States Government to the town in Yugoslavia where the artist lived.

In collaboration with the Conservation Coordinators of the National Museum of History and Technology and others, work is continuing on innumerable objects—documents and furniture—for their several Bicentennial exhibits.

National Museum Act Program

The National Museum Act, a specially funded grant program administered by the Smithsonian Institution, is intended to provide assistance to museums and their professional organizations, and to colleges, universities, and institutions of higher learning who wish to develop curricula in museum management or offer opportunities for professional enhancement. The Act also funds research in museum management, conservation, exhibitions, and teaching techniques which can enable museums to render more effective service to the public and better protect that part of the national heritage which is in their care.

Authorized in 1966, the Act was first funded in 1972. In 1975 it was reauthorized for another three years. Grant applications from individuals or organizations are reviewed by an Advisory Council consisting of museum professionals from various parts

of the country and representing different aspects of the museum field: art, science, history, education, conservation, and exhibition.

Council members in 1975 were:

William T. Alderson, Director,
American Association for State and Local History
Joseph M. Chamberlain, President, American Association
of Museums, and Director, The Adler Planetarium
W. D. Frankforter, Director, Grand Rapids Public Museum
Lloyd Hezekiah, Director, Brooklyn Children's Museum
Philip S. Humphrey, Director,
Museum of Natural History, University of Kansas
Lawrence J. Majewski, Chairman, Conservation Center,
Institute of Fine Arts, New York University
Taizo Miake, Director of Programs, Ontario Science Center
Arminta Neal, Curator of Graphic Design,
Denver Museum of Natural History
Bonnie Louise Pitman, Curator of Education,
New Orleans Museum of Art
Barnes Riznik, Vice President for Museum Administration,
Old Sturbridge Village
Mitchell Wilder, Director, Amon Carter Museum of Western Art
Paul N. Perrot, Chairman, National Museum Act,
Assistant Secretary for Museum Programs, Smithsonian Institution

In 1975 available funding amounted to \$802,000. A total of 149 applications were received, and the Advisory Council recommended funding for 56. They are divided as follows:

The Travel/Exchange Program, intended to assist younger museum professionals to broaden their knowledge of the museum field by visiting other institutions and studying their methods: 16.

Stipend Support for Graduate/Professional Training and Fellowships: 7.

Seminar/Workshop Training Program organized by professional museums or history-related organizations in various communities across the Nation: 15. These will be attended by approximately 1210 persons.

Special Studies and Research Program: 7.

Professional Assistance Program, which includes consultation services and technical training, especially in conservation: 10.

In the second half of fiscal year 1975 the administrative structure of the National Museum Act was reorganized and most operating procedures were refined. This will result in more expeditious handling of grant applications. New programs will be announced in the Guidelines for fiscal year 1976, which will be distributed in September 1975.

Office of Exhibits Central

More varied and more complete participation in the exhibition and exhibit-related programs of its clients, more international awards for its motion-picture productions, and the relocation and consolidation of most of its shops highlighted fiscal year 1975 for the Office of Exhibits Central (oec). Shops formerly located at the 24th Street facility and in the Natural History building are now in full operation at the new Smithsonian Institution Service Center at 1111 North Capitol Street. The move, efficiently planned and executed in coordination with other Smithsonian staff, promises greatly improved working conditions and increased productivity. Early in fiscal year 1976 certain design staff will relocate from the Arts and Industries building to the Service Center. The consolidation of the Design and Production staffs will improve the supervision of personnel and the coordination of work in progress; the consolidation of shop spaces, equipment, supplies, etc., will allow more efficient and economical management.

The Exhibits Motion Picture Unit of the oec was awarded a Gold Plaque at the Chicago International Film Festival for its original three-screen motion picture, "Survival Depends on Man's Use of the Earth," produced for the National Museum of Natural History. A 30-second television "spot," developed by Karen Loveland, Director of the Unit, for the Smithsonian Resident Associates received a CLIO award. The work of oec's inhouse film unit has now been recognized by thirteen awards for a variety of museum-oriented film presentations.

The Editor's Office of the oec received an award from the National Museum of History and Technology for its efforts on the exhibition "We the People." This office had a most active year



Bicentennial exhibition, "In the Minds and Hearts," being crated for travel in the United States. The original exhibition, at the National Portrait Gallery, was translated into a traveling version by the Office of Exhibits Central Editorial and Design Staff; then six copies were produced in oec shops. The exhibit is being circulated by the Smithsonian Institution Traveling Exhibition Service. The photo appeared in a special article on the bicentennial in *U.S. News and World Report* and is reproduced here through its courtesy.

working on traveling exhibitions and the special exhibits associated with the Festival of American Folklife. oec designers, Smithsonian Institution Traveling Exhibition Service exhibit coordinators, and cognizant curatorial staff cooperated on translating two exhibits presented in Smithsonian galleries into traveling exhibitions to be reproduced in multiple copies. These were "In the Minds and Hearts," a Bicentennial presentation of the National Portrait Gallery, and "News Reporting," a permanent exhibit at the National Museum of History and Technology.

The Museum Lighting Unit, in addition to working on new installations and maintenance, participated in energy conservation planning. Recommendations which included important modifications in architectural and exhibition lighting have resulted in considerable energy savings and, in some instances, in improved lighting effects.

Planning and preliminary production work for the Bicentennial programs of several Smithsonian museums and offices were carried out and this work will continue through fiscal year 1976. In 1975 the OEC participated in 106 projects small and large, long range and short. Programs completed in fiscal year 1975 in which the OEC contributed heavily included "In the Minds and Hearts" (NPG/SITES), "News Reporting" (NMHT/SITES), "We the People" (NMHT), "Ice-Age Mammals and the Emergence of Man" (NMNH), "Blacks and the Westward Movement" (ANM/SITES), "ZOO/100" (NZP/SITES), "Pandas" (NZP), "Bicycles" (SITES), and signs and learning centers for the Festival of American Folklife. OEC staff have also participated in a successful series of workshops run by the Office of Museum Programs and consulted with and for several government and private museums and exhibiting organizations.

Office of Museum Programs

The Office of Museum Programs is primarily responsible for coordinating a variety of activities relating to training in museum management, disseminating information on conservation principles and practices, and developing methods to assess the effectiveness of the museum as a learning environment. To achieve these aims, three distinct departments have been formed.

The Museum Workshop Series takes advantage of the unique human resources of the various museums and research departments of the Institution. The training office coordinates lectures, seminars, and workshops on various aspects of museum management. This program, which has been in existence for a number of years, has been reorganized in the past few months and will be presenting more frequent and a larger choice of offerings. Under the direction of Mrs. Jane R. Glaser, former Director of the

Children's Museum in Charleston, West Virginia, new subjects will be introduced, and a special program will be developed to meet the needs of special constituencies, and particularly to offer training opportunities for the personnel of the various museums and cultural centers which are now under development in Indian communities.

This training department will also coordinate programs specially tailored to the individual needs of foreign museum personnel who wish to acquaint themselves with the methods in use at the Smithsonian Institution and at other museums in the United States.

The Conservation Information Program prepares, in cooperation with the Smithsonian Institution Conservation-Analytical Laboratory, and with the assistance of other museum laboratories and research organizations when required, video tapes and slide programs intended to demonstrate the basic principles of chemistry that apply to conservation and up-to-date methods in the handling of artifacts. Seventeen slide presentations, accompanied by taped narrations, have been announced, and others are in various stages of completion. These slide/tape presentations are available free-of-charge to museums, historical societies, training and research organizations throughout the United States and abroad. Editing has been completed on a series of eighty video-taped lectures, a half-hour to an hour in duration, presented by Dr. Robert M. Organ, Chief of the Conservation-Analytical Laboratory. Copies of these will be available in cassettes or reel-to-reel form. They present a unique panorama of the basic principles of chemistry and of conservation practice. The first twenty are now being distributed, and it is expected that the entire series will be available by the fall of 1975.

A constant riddle to museum directors and their senior staffs has been the evaluation of exhibits and their effectiveness with the visiting public. The fact that museums are key elements in the learning apparatus of an enlightened citizenry is no longer questioned, but there is still much uncertainty concerning the quantification of their effectiveness. Museums are experimenting with a wide variety of new exhibition techniques. These often combine sound, moving images, push buttons, and various other devices intended to attract the attention of the visitor and, in many cases, physically engage him in an interactive mode. How these new

May 19, 1975

Gentlemen

This money was earned by a group of eight third grade boys. They researched the mythology of several countries and organized a small museum in the classroom, charging 1¢ admission. It was their decision to donate their profits to your institution.

Sincerely,
Kathy Lou Jones

Oñate Elementary

The story told by the letters on this and the facing page is indicative of a growing nationwide interest in and support of the Smithsonian. The concern and generosity of these children at Oñate Elementary School, Albuquerque, New Mexico, gives encouragement to the Institution as it attempts to carry out its many programs.

techniques add to the learning quotient, and which are most effective in transmitting information, is still a matter of considerable puzzlement.

In an attempt to provide museum administrators with more precise information upon which to base their decisions, the Office of Museum Programs has embarked on a multi-year psychological study of "The Museum as a Learning Environment." A small resident staff of professionals and para-professionals has been supplemented by expert consultants who have cooperated in developing new testing methods. Professor Chandler Screven, of the University of Wisconsin, Milwaukee, completed a study on the effectiveness of various audio devices in enriching the contents of what was an entirely visual presentation. The results of his

Dear Smithsonian

Institution, This money
is to help us make
equipment for the Smithsonian
Institution. We collected
in 5 weeks signed all
Swatara. We earned ^{the} money
from the museum. we have gods
from, egypt, norway,

indians, orient,
India, indonesia,

greece, and other gods.

signed sean jacob
we earned the money from
a museum we made
Alma Jono-wood.

over

Dear sir, we
send you this money
to help you with
your growing needs.

In this jar there
is \$600. we hope
you can use our
money. Signed Jeffrey
Benjamin

experiments with "The Glass of Frederick Carder" exhibition at the Renwick Gallery are soon to be published in a professional journal. His major monograph, *The Measurement and Facilitation of Learning in the Museum Environment: An Experimental Analysis*, announced in 1974, will be printed and available for distribution in early October 1975.

Dr. Gary H. Winkel, Associate Professor, Environmental Psychology Program, City University of New York, was retained as a special consultant to study the visitor flow and orientation patterns at the National Museum of History and Technology. His study, completed in June 1975, will be carefully analyzed prior to the introduction of new orientation devices at the National Museum of History and Technology. Other studies conducted in the last few months are attempting to gauge the effectiveness of nonuniformed attendants in providing information and security in an art museum environment. *Studies of Visitor Behavior in Museums and Exhibitions: An Annotated Bibliography of Sources Primarily in the English Language*, by Dr. Ross J. Loomis, of the University of Colorado, and Miss Pamala Elliott, was also completed.

Office of the Registrar

Registration is an important aspect of the overall care and documentation of the national collections. Each museum within the Smithsonian complex has, or is developing, its own registration capability, responsive to the peculiar needs of that bureau. The Central Registrar and the Council of Registrars provide coordination of registration activities. The Council also provides a forum for professional discussion.

During 1975, the Office of the Registrar focused its attention on the information management aspect of collections management on the Institutional level. Special attention was given to problems of development of Institution-wide information systems for access to the national collections. As each museum develops its registration and cataloguing information system, an Institutional system must emerge which provides information on related specimens wherever they may exist within the Smithsonian. Development of off-Mall

buildings for care of specimens emphasizes the requirements for coordinated registration systems. Beyond this lies the potential for intermuseum computer networks.

A major information management effort by the Registrar's Office began in the summer of 1975. A study of existing information systems, computerized and manual, was undertaken as a pilot project to test application of information science techniques to the Smithsonian on an Institutional level. A report resulting from this study will be submitted to the Assistant Secretary for Museum Programs during fiscal year 1976.

Meanwhile, the Office of the Registrar continued its traditional function of registrar for the National Museum of History and Technology and the National Museum of Natural History. More than 2400 accession and 4500 transactions, involving the movement of about 550,000 specimens or objects, were processed during fiscal year 1975. The Shipping Office dispatched and received shipments for NMNH and NMHT and for several other bureaus as well.

The Council of Registrars met regularly during fiscal year 1975. Major topics included: insurance, packing, security during exhibits, intra-Smithsonian movement of objects, cataloguing procedures throughout the Smithsonian, decentralization of the Central Registrar's Office, computerization of registration processes in several Smithsonian bureaus, development of forms, and Silver Hill and other storage facilities.

The Council also reevaluated its own functions and objectives, with the result that its members now have a better sense of the common goals to be pursued to improve registration at the Smithsonian.

Smithsonian Institution Archives

During fiscal year 1975 the Smithsonian Archives continued its effort to gain intellectual control of archives spread throughout the Institution. Work on the archives of natural history continued as did work with records of the National Museum of History and Technology. The computer index, which gives name and subject access to all processed collections in the Archives and to some

materials that have remained in the National Museum of Natural History, was completed.

A major effort was made to establish archival programs for the Smithsonian Astrophysical Observatory and the National Collection of Fine Arts. Two archivists spent a week at the Astrophysical Observatory in December surveying records, and a large accession from that bureau resulted. In addition, researchers from the National Aeronautics and Space Administration are finding old Astrophysical Observatory data, housed in the Archives, valuable for their current atmospheric research. Records of the National Collection of Fine Arts are being processed and serviced by Archives staff, but are remaining in the custody of the National Collection of Fine Arts.

The Archives' Oral History program was continued through a series of interviews with distinguished curators on the staff of the National Museum of Natural History. During fiscal year 1975 the program concentrated on documenting the history of the National Museum of Natural History.

Arrangement and microfilming of the accession records continued.

Smithsonian Institution Libraries

Nineteen hundred and seventy-five was notable because of the significant increase in the Libraries' staff. Priority in new personnel assignments was placed upon on-site service to users. New positions were added to the bureau libraries in the National Air and Space Museum, the National Museum of History and Technology, and to the teams that serve the National Museum of Natural History, the Radiation Biology Laboratory, and the National Zoological Park. The key positions of bureau librarians for the National Museum of Natural History and the Cooper-Hewitt Museum were established, and the Libraries assumed responsibility for funding the personnel assigned to the Smithsonian Tropical Research Institute library. The creation of the rare book cataloguing and the hand binding positions testify to the importance of collection preservation and management as a vital library service.

This increase in staff size, and the concomitant growth of service responsibilities and funding for collection development heightened the need to attend to management issues. Implementation of the recommendations of the Management Review and Analysis Program (MRAP), begun in the preceding year, continued, under the watchful eye of an Implementation Assessment Group composed of Libraries' staff members. Special studies were conducted of the Libraries Technical Services operation, and a survey of users' services was begun. The Libraries' experiences continued to be shared with several other major research libraries undergoing the MRAP process, chiefly through seminars and lectures given by Dr. Elaine Sloan, chairperson of the team that conducted the Smithsonian's study. The Libraries also conducted a one-day workshop in cooperation with the Consortium of Universities in Washington and the Association of Research Libraries Office of Management Studies on the issues and problems of implementation of management change. In addition, the Director was appointed to the Management Commission of the Association of Research Libraries under whose aegis MRAP was developed. As part of the implementation process, the Administrative Conference of the Libraries, composed of the managers of library units and Libraries' administrative staff, met at regular intervals to exchange information and to discuss management and operational concerns. A program was established to document policies and procedures for library management.

For the first time the Libraries were funded sufficiently well to establish a base for a continuing budget for the acquisition of library materials, although the gains were somewhat muted by the severe inflation of book prices. The most significant event in collection development, however, was the acquisition by gift of the major titles in the Burndy Library devoted to the history of science and technology. The collections in this noted research library have been gathered by Dr. Bern Dibner, a manufacturer of electrical products in Norwalk, Connecticut. The Dibner collection matches precisely the programs of research in the National Museum of History and Technology and will be housed in that bureau. Mr. William Leugoud was recruited from the staff of the Rare Books Department of the Library of Congress to be the librarian of the collection. The Libraries received other important

gifts from Smithsonian staff members and other friends, many of which are listed in Appendix 13.

The experiment in cooperative cataloguing with other federal libraries, spearheaded by the Smithsonian Institution last year, was extended for a second year. Approximately 65 percent of the titles catalogued for the Libraries were processed through this system, which is based on computer facilities and machine-readable bibliographic records at the Ohio College Library Center (OCLC) in Columbus. By year's end twenty-eight federal libraries with thirty-six computer terminals were joined in the network. An evaluation of the experiment, conducted for the Federal Library Committee, clearly indicates that the OCLC system does decrease the rate of rise of the cost of processing library materials, and that preorder searching for bibliographic information and the location of titles for interlibrary loan are important byproducts of the system. A small group of federal libraries, including the Smithsonian Institution, has begun to examine additional products that might be obtained through cooperation in automation.

The Libraries' contribution to the library profession included involvement of the staff in local, national, and international activities. Catherine Scott continued her service as a member of the National Commission on Libraries and Information Science. The Commission's program statement for national library information service was completed during the year. The Director represented the Smithsonian Institution as an observer at the UNESCO Conference on national planning of library, archive, and documentation service in Paris. The Smithsonian Institution held a reception for the nearly 1000 delegates of the International Federation of Library Associations at its first United States meeting. The National Copyright Conference, convened by the Register of Copyrights and the Chairman of the National Commission on Libraries and Information Science, met twice at the Smithsonian Institution as publishers and librarians attempted to resolve issues raised by the proposed copyright law revision. The Director was elected to the Board of Directors of the Association of Research Libraries and the Executive Board of the American Library Association, and assumed the office of President of the United States Book Exchange of which the Institution is a sponsoring member. Dr. Elaine Sloan served as a consultant to the American Library Association's Collection

Development Committee and as a member of a joint American Library Association/Association of American Publishers Task Force on the Selection of Library Materials. William Walker became National Chairman of the Art Library Society of North America and served as program chairman for the Society's annual conference in Washington, D. C. Jack Goodwin was Chairman-Elect of the Museum, Arts and Humanities Division of the Special Libraries Association, and editor of the Division's *Bulletin*.

Smithsonian Institution Traveling Exhibition Service

Major expansion characterized the twenty-third year of the Smithsonian Traveling Exhibition Service's (SITES) program. New services were made possible by Bicentennial funds awarded by Congress and by the American Revolution Bicentennial Administration. These funds, together with income from rental fees, grants, and contracts, have:

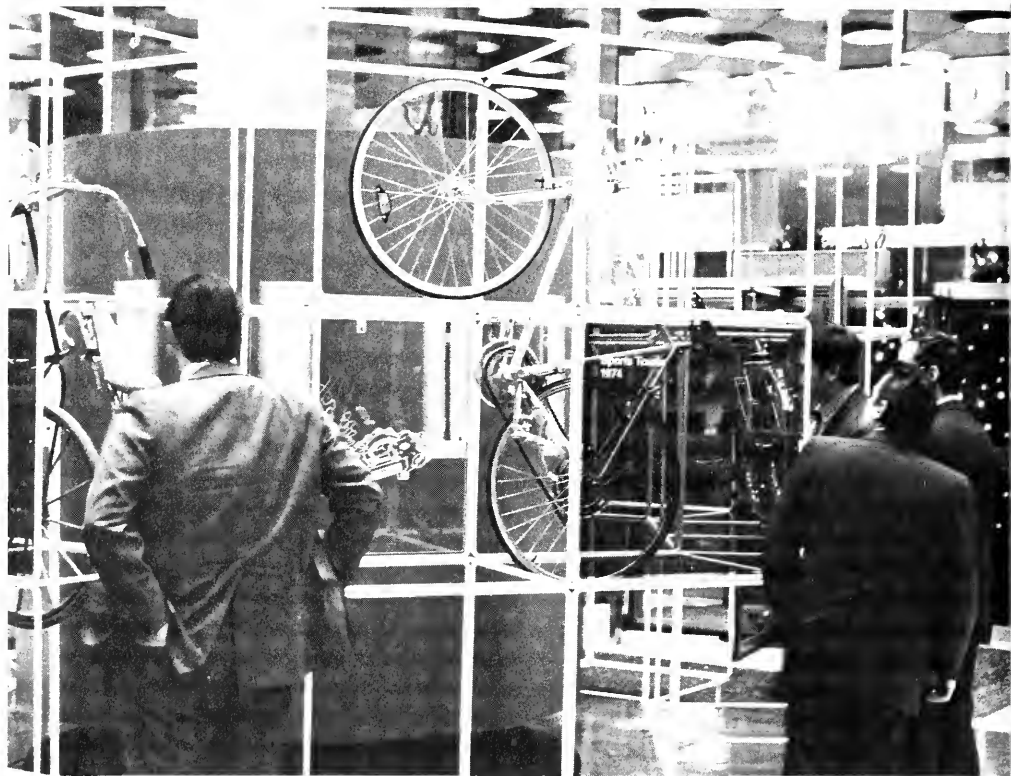
1. Developed a department for the coordination of Bicentennial Exhibitions drawn from the Smithsonian and other United States sources.

2. Initiated an "International Salute to the States" program of exceptional exhibitions loaned by other nations to honor our 200th birthday as a republic.

These two additions have greatly enriched SITES' diverse offerings of science, history, and art exhibitions; doubled the number of its staff; and greatly increased SITES' ability to serve an ever-growing constituency.

The planning of a program to interpret SITES' exhibitions was completed this year. Two full-time, and two part-time program coordinators, and three interns are now assisting exhibitors of SITES shows in making the viewing experience more meaningful to their visitors. The programs take many forms and vary from small give-away brochures, to grant-assisted lecturers. These efforts have helped in keeping SITES focused on the needs of their audiences.

A new format was developed to improve the usefulness of the reports received in Washington from exhibitors. The comments on



"Ride On!" The bicycle exhibit was viewed for the first time at the First National City Bank of New York, December 16, 1974, to January 12, 1975. "Ride On!" was made possible by a grant to SITES from the Charles E. Merrill Trust.

exhibition quality and the summaries of interpretive programs undertaken by borrowers, as well as their audience-building efforts, provide a base for determining future directions for SITES

Fiscal and administrative systems were improved. SITES' registrar was joined by an assistant to cope with ever-enlarging responsibilities. An audit by the Smithsonian's Office of Audits produced a more consistent method for determining exhibition rental fees.

Staff travel to important museum meetings and in the development of shows continued. A workshop on the circulation of exhibitions was sponsored by SITES at the annual meeting of the American



Dr. Henry E. Wenden lectures on coverlets at the University of Cincinnati in December. "American Coverlets" is the prototype for SITES' information core shows—shows that are expressly designed for the addition of local artifacts. SITES will produce no less than fifty exhibitions for the Bicentennial, several in multiple copies.

Association of State and Local History. SITES' representatives at several regional meetings and at the national meeting of the American Association of Museums gained important insights of the concerns of museums and galleries. Staff members traveled to Yugoslavia, Italy, Austria, Norway, Finland, Sweden, Denmark, Great Britain, Egypt, Cyprus, and Australia to work on the development of new shows originating in those countries. Most foreign trips were taken to implement the "International Salute to the States" program announced to Washington's diplomatic corps at a reception in the Smithsonian Building's Great Hall in October.

At year's end, six exhibitions in this program were committed for tours beginning in 1976. Twenty additional nations are participating in negotiations that will most likely result in tours of other unique shows created for United States audiences.

SITES' plan to place fifty exhibitions relating to the Bicentennial (many in several copies) on tour made great progress. It appears that this number will be exceeded.

There are two types of Bicentennial exhibition: (1) those that contain original objects and (2) panel shows. Exhibitions with original objects are made up and borrowed for tour from the Smithsonian, other United States lenders, and from collections in other countries. Panel exhibitions are of two types: (1) those that stand alone—without the addition of artifacts (e.g., "Blacks in the Westward Movement," beginning its tour this year); and (2) the so-called "information core" exhibitions—shows that prompt exhibiting institutions to add objects from collections in their area, thus providing a conceptual framework which can be fleshed out from local resources. Information core exhibitions (e.g., "Suiting Everyone," beginning its tour this year) are a new dimension in the travel of shows. They save transportation costs and begin a new era of cooperation between the Smithsonian and museums throughout the United States.

Year-End Totals

Number of Bookings	498
Number of States Served	45
Estimated Audience	3,984,000
Institutions Receiving Data on Show Availability	3,700
Exhibitions (including copies) listed in last <i>UPDATE</i> (catalogue of SITES exhibitions)	199
Exhibitions Produced for Tour During the Year	53
Exhibitions Refurbished for Extended Tour	4

Exhibitions Beginning Tours in Fiscal Year 1975

American Dolls

Australia Goes Metric

The Black Presence in the Era of the American Revolution,
1770-1800 (6 copies)

Blacks in the Westward Movement (5 copies)

Contemporary Textile Art from Austria

Delacroix and the French Romantic Print
Edwin Janss, Jr., Underwater Photography
Egyptian Tapestries from the Workshop of Ramses Wissa Wassef,
an Experiment in Creativity
Folk Baroque in Mexico: Mestizo Architecture Through the Centuries
Graphics by Rolf Nesch
In the Minds and Hearts of the People: Prologue to the
American Revolution, 1760–1774 (6 copies)
Jack Tar: Profiles of American Merchant Seafarers, 1794–1803 (3 copies)
Lion Rugs from Fars
The Magnificent West: American Heritage (2 copies)
Manuscripts of the American Revolution (5 copies)
New Zealand: A Nation's History in Stamps
Population: The Problem Is Us (4 copies)
The Poster in Puerto Rico
Revival!
Ride On! The Bicycle Exhibit (original version with artifacts)
Ride On! The Bicycle Exhibit (3 copies)
Stephen Parrish: 19th-Century Picturesque
Suiting Everyone (5 copies)
Zoo/100

Exhibitions Refurbished for Extended Tours

Indian Images (2 copies)
Story of a Goblet
Victorian Needlework



Mr. Joseph H. Hirshhorn being interviewed by WTTG's Channel 5 newscaster Maury Povich (left) and Frank Getlein (right), art critic of the *Washington Star*.

PUBLIC SERVICE

JULIAN T. EUELL, ASSISTANT SECRETARY

Over the past year the activities of the Smithsonian's public service bureaus reached out to an unprecedentedly numerous and far-flung audience. In terms of statistics, several of our programs were immensely successful. By the end of the year, however, the Assistant Secretary for Public Service and his staff were engaged in a careful reassessment of where these successes were leading us in terms of the Smithsonian mandate for the diffusion of knowledge, and to what extent the Public Service bureaus were equipped and organized to sustain such a level of activity. The experience gained from this first year of the popular Smithsonian Television Specials, professionally produced and presented on prime time with the backing of a major sponsor, revealed to us clearly the extent to which "knowledge" must be diluted in favor of "entertainment" to make it appealing to the millions of viewers whom sponsors and networks require to justify their major investments in time and money. The three programs presented fulfilled these requirements. The first Smithsonian Special drew the highest audience rating ever achieved by a television "documentary"—over 50 million viewers—and the second and third programs maintained gratifyingly high appeal by commercial television standards.

Many Smithsonian curators and staff members, however, were disturbed over the content of the shows—feeling that they did little to inform or educate their audiences as to what the Smithsonian was really about. Similarly, it was found necessary during the year to make a thorough reappraisal of some of the highly popular

Resident Associates' offerings, and to refocus the lecture programs, in particular, away from the purely popular and toward topics more directly relevant to Smithsonian collections and interests.

In the same context, the Secretary has asked the Assistant Secretary for Public Service and the Director of the Division of Performing Arts to consider carefully the post-Bicentennial future of our very popular summer Folklife Festival on the Mall, which will reach a crescendo in popular appeal with the elaborate eight to twelve weeks of presentations during the summer of 1976. These folklife programs are carefully and academically researched and designed by the Division of Performing Arts staff to deliver a thoughtful, cultural message, but again there is legitimate concern that the majority of the people who attend them regard them primarily as free public entertainment, and perhaps absorb little of the "knowledge" they are planned to convey.

The educational efforts of other public service bureaus have been more fruitful in a less sensational way. The central Office of Elementary and Secondary Education has made great strides forward this year in bringing the educational value of Smithsonian exhibits and collections to the attention of teachers throughout the greater Washington area through well-attended workshops and a strong publication program. The Resident Associate Program has developed an adult education effort which has become a model for universities and colleges in the area. Over 7778 participants were enrolled in Resident Associates' classes, workshops, and seminars during the year. The Smithsonian Visitor Information and Associates' Reception Center continues to improve our ability to provide invaluable guidance to the millions of visitors to our museums and galleries, thanks to capable staff direction and the dedication of the 250 volunteers who participate in the program.

Construction of the Anacostia Neighborhood Museum's Exhibits and Design Laboratory building was completed during the year and it will open in the fall of 1975. The Anacostia staff focused on equipping and staffing the Laboratory in order to prepare for the museum's exhibit needs in its Bicentennial program, which includes developing and conducting a Ford Foundation-sponsored design and exhibits training program for minority young people. The Anacostia Neighborhood Museum also scored a major popular success during the early months of 1975 with the exhibit

entitled "Blacks in the Westward Movement." The success of this exhibit too gave pause for thought. Is it appropriate for the Smithsonian Institution, as our national museum complex, to continue a museum operation, essentially focused on one local community, when public interest is so clearly responsive to far broader examinations of the national experience of American racial and ethnic minority groups?

Continuing deficits on the trade book side of the Smithsonian's publishing efforts stimulated the Publications Review Board to recommend to the Secretary early in 1975 a careful survey of publishing operations at the Smithsonian by a very reputable firm of management consultants. The consultants' report, in turn, generated a major reappraisal of the Smithsonian's publishing effort, including a reorganization of the Smithsonian Institution Press, itself. A major decision taken by Secretary Ripley toward the end of fiscal year 1975 was to terminate, for the present, private-side publishing, and to confine the work of the Press to publication of federally funded series and nonseries manuscripts produced or directly sponsored by a Smithsonian museum or gallery. This policy will be adhered to pending appointment of a new Publications Director-Coordinator with substantially broadened responsibilities.

In sum, fiscal year 1975 has been a year of success and of experiment and appraisal in the public service area. We have walked in the bright glare of the popular spotlight, and learned the price for the applause of a huge, but not necessarily discriminating audience. In the coming year we must draw on this experience to determine what manner and what level of public appeal best fulfills the Smithsonian mandate for the diffusion of knowledge.

Anacostia Neighborhood Museum

Anacostia Neighborhood Museum on September 15, 1975, will have completed eight years of service, education, and special programming for the Anacostia community. In that time span, this museum, which began as a "store-front" operation in the community of Anacostia with particular emphasis on neighborhood involvement and on the history and culture of its immediate environs,

has grown into a nationally recognized center of black history and culture. Indeed, visitors have come from art communities in Africa and Europe to learn more about this unique center.

Over thirty-five major exhibitions have been produced by the Anacostia Neighborhood Museum since its inception. The variety of these shows is typified by the five exhibits produced this past year.

The first was an exhibition of over one hundred pieces of art in various media, including oil, watercolor, silk screen, etching, ceramics, stitchery, clay, and papier mache, by students in the elementary, junior, and senior high schools of the District of Columbia. For most of the participants, it was the first time their work had been displayed. The next exhibition, "The Message Makers," concerned the communication media—television, radio, newspaper, and film. It examined the decision-making process utilized by the media in determining the selection of a message and in its influence on the lives of people in general, and black people in particular.

The fifth annual exhibition of works by members of the D.C. Art Association was presented in November. These art exhibitions not only celebrate the creative efforts of members of the Washington community but also encourage young artists who view the exhibition. With this in mind, the last exhibit this fiscal year was "East Bank Artists," a display of work by student, nonprofessional, and professional artists living east of the Anacostia River. Many of the sixty participating artists, representing a wide variety of talent and background, were exhibiting in a public museum for the first time.

In celebration of this year's Black History Week, the Museum opened its first Bicentennial exhibition, "Blacks in the Westward Movement." This exhibition tells the story of the blacks who explored, conquered, and settled the western portion of America, a story of interest to every citizen of the United States, but one that has long been neglected. Five copies of this rich and colorful exhibit are traveling throughout the United States under the auspices of the Smithsonian Institution Traveling Exhibition Service. Three other Bicentennial exhibitions: "The Frederick Douglass Years," a traveling show only; "The Black Woman," to open at the Museum in January 1976; and "The Anacostia Story," to open at the Museum in July 1976, will also be traveling throughout the Nation under the auspices of SITES.



John Kinard, Director of the Anacostia Neighborhood Museum, gives a talk for visiting members of the international museum community. *Below:* Mr. Kinard greets visitors from Togo. Shown (from left) are Kikou Mathias Aithnard, Director of Culture and Scientific Research; William Adojoyi, Cultural Attache, Togo Embassy; Agbenowossi Kodjo Koffi, Minister of Youth, Sports, Culture and Scientific Research. The Togoese officials were interested in the role of the Smithsonian in the cultural life of the United States and Washington, particularly in seeing how the neighborhood museum works with young people.





Roy Slade, Director of the Corcoran Gallery of Art, and Peggy Cooper, founder of Workshops for Careers in the Arts-High School for the Arts, look over a work of art they are judging for the Anacostia Neighborhood Museum's D.C. Art Association Exhibition 1974-1975.

During fiscal year 1975 nearly 70,000 persons visited or were served by the Museum and its Mobile Unit. Most of these were either scheduled tour groups or participants in the education department's sponsored programs and activities, but many were scholars, museologists, and representatives of organizations such as the International Council of Museums, Congressional Wives, and Resident Associates. Highlights of these sponsored programs included the arrival of Santa Claus in Anacostia, witnessed by over 3000 children, and the eighth annual Young People's Festival of the Arts, a program that included performances by local school groups as well as by the United States Navy Band-Port Authority, the Howard University Children's Theatre, the Dance Project, and Jones-Haywood School of Ballet.

An exciting cultural achievement this year was the creation of the Anacostia Historical Society. With a membership of 140 con-

cerned citizens, the Society is interested in promoting community pride through the study and appreciation of Anacostia's history.

In the coming year Anacostia Neighborhood Museum looks forward to producing its Bicentennial exhibitions in the new Exhibits Design and Production Laboratory to be opened in the fall of 1975.

Division of Performing Arts

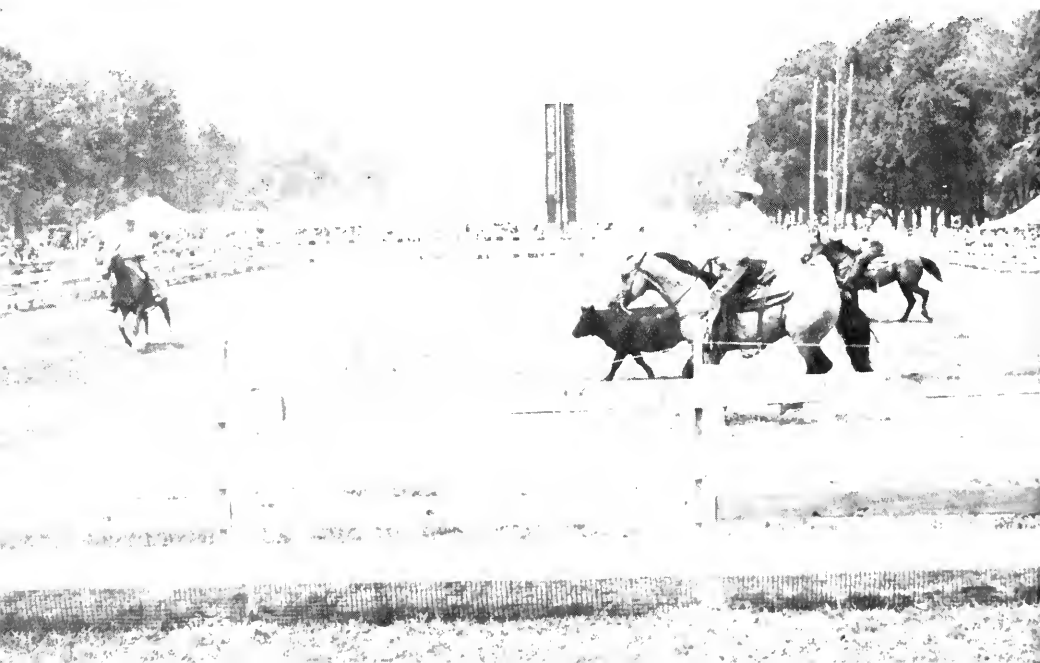
Carrying out the Institution's role as cultural conservator, the Division of Performing Arts is responsible for planning, producing, and presenting performing arts events, with an emphasis on programs that relate to and enhance the Institution's collections.

The Division has achieved national outreach and international participation with several of its programs: the eighth annual Festival of American Folklife, the Smithsonian Collection of Classic Jazz, and an extensive winter concert program. In addition, the Division of Performing Arts shares the American experience in its many creative forms with people across the Nation through touring performances of its concert series, and tours of ethnic performers from the Festival.

The winter concerts, organized around nine different series, made a statement about musical diversity. Jazz, Chamber Music, American Popular Song, and Women in Country Music were some of the themes. The cultural contributions of a number of leading American artists were honored at Smithsonian presentations including Dizzy Gillespie, John Raitt, Jan DeGaetani, Margaret Whiting, Randy Weston, and Maybelle Carter. The Jazz Heritage concert series and free public workshops, offered for the third year under the direction of Martin Williams, continued at the Baird Auditorium; a new Jazz Connoisseur series was added at the Hall of Musical Instruments. A new series of contemporary music inaugurated the auditorium of the Hirshhorn Museum and Sculpture Garden. "Man and His Culture," a new series at the Museum of Natural History, presented Malaysians, Sri Lankans, and Japanese in performances related to the anthropological collections. With the Division of Musical Instruments, a dozen events featured rarely



A Scandanavian broom dance in the Old Ways in the New World area was a featured presentation at the Festival of American Folklife. *Below:* Calf-herding techniques were also a lively part of the Mississippi presentation at the Festival.



performed music played on original instruments from one of the world's largest collections. More than 15,000 persons attended the more than fifty-five events offered.

The Touring Performance Service during the 1974-1975 season sent fifty-four performances of folk music, puppets, and theater on tour to twenty-one cities in twelve states. The Smithsonian Resident Puppet Theatre attracted 3000 people to the premiere of "The Book of Three" as well as 3000 to a new musical version of the classic *Treasure Island*.

Enlivening the mall area, the Division continued to operate an old-time popcorn machine and an authentic carousel.

Celebrating the cultural vitality of America's traditional culture, the Division presents the annual Festival of American Folklife. The 1974 Festival brought 900 performers from Tunisia, Greece, Nigeria, Trinidad, Norway, Sweden, and Finland, fifteen Indian tribes, nine unions and organizations representing "Workers in Communications," and the state of Mississippi. More than one million visitors attended the ten-day Festival, co-presented by the National Park Service.

Office of Elementary and Secondary Education

The Office of Elementary and Secondary Education (OESE) is charged with giving assistance, upon request, to the education offices of the various Smithsonian museums and public service bureaus.

A primary responsibility of OESE is to encourage cooperation and exchange of information among the Smithsonian education offices and between those offices and the District of Columbia area schools. Toward this end, a number of efforts are currently underway. Two publications—a monthly newsletter, *Let's Go*, and an annual brochure, *Learning Opportunities for Schools*—inform teachers of Smithsonian programs and other activities of interest to young people and contain suggestions for using museums as educational resources. The publications are sent free of charge to over 1300 area schools. In addition, an annual "Teacher's Day" brings teachers and education staff members together for an informal

program of conversation and special activities. In 1975, more than seventy Washington-area educators took part in this event, which featured a preview of Smithsonian Bicentennial plans and a walking tour of the Mall.

Teachers are reached also through an OESE workshop and seminar program, now in its fourth year. During fiscal year 1975, a total of 2200 teachers participated in seventy workshops and seminars, including a summer (1974) course enabling the development of curriculum units, based on Smithsonian resources, for use in the school classroom. Among the diverse projects in art, history, and science that resulted from the course was a unit on Colonial Life, developed by a fourth-grade teacher from Montgomery County Public Schools. Through visits to period rooms in the National Museum of History and Technology and a variety of home and classroom activities—such as washing and carding wool and making old-fashioned gingerbread and sassafras tea—students taking part in the unit were able to discover at first hand some of the hardships and pleasures of colonial living. The culminating activity was a "Colonial Day" festival, for which the youngsters, dressed in period costumes, shared the results of their labors with their schoolmates.

In fiscal 1976, an increasingly varied selection of teacher training and orientation programs will be offered, including a special Bicentennial series, "Tuesdays at the Smithsonian," a seminar on museum teaching methods; and a three-week in-service course sponsored in cooperation with the Fairfax County Park Authority and the Fairfax County Public Schools.

For the past five years, a learning-service experience for teenage volunteers has been provided through the OESE "Summer Info Program." In 1974, twenty-seven Washington-area high school students, selected and trained by OESE, conducted visitors through the National Air and Space Museum and the National Museum of History and Technology.

In June, July, and August 1975, a pilot program for summer interns, sponsored by OESE, will carry the Info idea a step farther. Twenty-one promising high school seniors from rural and inner-city communities as far away as Maine and North Carolina will engage in learning-service projects in various parts of the Institution under the guidance of curatorial and other professional staff

Through workshops, publications, and related activities, the Office of Elementary and Secondary Education will continue to serve the Smithsonian's education offices, while seeking to meet a growing commitment to foster the educational uses of museums in the Washington area and throughout the Nation.

Office of Public Affairs

The central mission and continuing priority of the Office of Public Affairs are to support and augment various Smithsonian programs concerned with the increase and diffusion of knowledge so that there will be a greater public understanding of the Institution's activities. Basically, the Office of Public Affairs' main functions are those of popular education and visitor orientation through the use of diverse media. News releases, radio and television productions, brochures, periodicals, filmstrips, and code-a-phones are among the techniques appropriately employed to reach the many audiences to which the Institution seeks to address itself. In addition, the staff devotes a considerable amount of its time and skills to employee communication in a daily effort to keep the Institution's curatorial and administrative leadership aware of media developments, cultural criticism, museum innovations, and other societal trends that might affect Institutional planning.

One satisfying and rewarding result deriving from the Office of Public Affairs' efforts is the apparent deeper etching of the Smithsonian's name in academic and museum communities around the world as a preeminent center of intellectual and cultural activities. Smithsonian is a familiar word in the libraries and the living rooms of America. More and more public attention is being received by research programs, informative exhibits, and special academic events at the Smithsonian, a byproduct of the Institution's continued growth and further encouragement of significant and exciting areas of scholarship by its professional staff.

During the year, the Institution moved forward on several fronts in the expanding field of telecommunications, including television, film, and radio. Through a trio of special programs, the Smithsonian made an outstanding showing in prime-time commercial network television. Presented on the Columbia Broadcasting System's net-



Nazaret Cherkezian, Telecommunications Coordinator, Smithsonian Office of Public Affairs, and Paul E. Desautels, Smithsonian Curator of the Division of Mineralogy, with the Hope Diamond. The famed gem was the subject of a television special on March 27, 1975.



At the Smithsonian Institution to commemorate the fifth anniversary of the First Landing on the Moon, Buzz Aldrin, Mike Collins, and Neil Armstrong stand in front of Command Module *Columbia*, July 20, 1974.

work as part of the DuPont Cavalcade of Television, the programs concerned the natural sciences and flight. The programs were titled: "Monsters! Mysteries or Myths?;" "Flight: The Sky's the Limit," a look at flight through the eyes of teenagers; and the "Legendary Curse of the Hope Diamond," portraying some of the legends behind the Institution's most popular artifact. It should be noted that the initial program, which sought to use the scientific method in analyzing the worth of myths concerning the Abominable Snowman, the Loch Ness Monster, and the Bigfoot Expeditions, scored the highest rating for a documentary heretofore presented on American television.

With the approach of the Bicentennial, film-makers, television producers, audiovisual companies, and radio stations have increased their already heavy demands for Smithsonian participation. Programs such as the National Broadcasting Company's "Today" show and the American Broadcasting Company's "AM America" originated "live" film and videotape reports from the Institution. They covered a variety of topics ranging from the life of America's giant pandas, Hsing-Hsing and Ling-Ling, at the National Zoological Park, to the National Museum of History and Technology's popular "Whatsit" exhibit.

In addition, the Telecommunications Staff coordinated Smithsonian participation in productions by many outside companies and agencies including the United States Information Agency for overseas distribution, the Armed Forces Radio Network, and the Congressional radio-television group.

As part of the Institution's "outreach" effort, the Telecommunications Staff worked with the Encyclopaedia Britannica Educational Corporation in the development and introduction of the first five in a series of educational filmstrips entitled "Museums and Man." Designed for students from middle-school level up, the filmstrips provide a colorful, richly informative overview of the world of museums. Additional filmstrips in the series, relating to other Smithsonian interests, are being prepared.

A forty-five-minute film covering the Institution's many bureaus and activities was produced by the telecommunications staff for use by Smithsonian representatives speaking to outside audiences. The silent film was specifically designed for use with the speaker's own narration.

“Radio Smithsonian” continued to present half-hour weekly programs cutting across the full range of Smithsonian interests. As the year ended, the program was being carried by sixty radio stations across the Nation as well as on the “Voice of America” overseas. The “Radio Smithsonian” staff also assisted in coordinating audio records of significant events at the Smithsonian as part of an effort to develop an oral archive. In this area, planning was started with the National Air and Space Museum on the development of an oral history program concerning the development of flight around the world.

The Office of Public Affairs' Publications Section continued to mirror activities at the Smithsonian through the pages of the monthly *Smithsonian Torch*. The quarterly, *Smithsonian Institution Research Reports*, was expanded to provide an improved outlet for news of research in various disciplines—in the humanities as well as in the natural sciences—underway in the “back room” laboratories and libraries of the Institution. *Research Reports* now have an expanding international circulation which includes both the academic community and the general public. The section has worked with the Bicentennial coordinator to produce a new general leaflet about the Smithsonian which incorporates information about Bicentennial exhibitions and events. This leaflet is being translated into several languages for foreign visitors. Millions of copies of both the English and foreign language versions will be printed for the Bicentennial visitors.

The following leaflets were issued by the Office of Public Affairs in fiscal year 1975:

	<i>Identification Number</i>
References to North American Silver and Silver-Plated Wares	74-7
References to Fireplaces and Ovens	74-8
Bibliography on Folk Instruments	74-9
American Carousels	74-10
References to Woodenware	74-11
Bibliography of the Civil War	74-12
Machines and Models in Suiting Everyone	74-13
References on North American Indian Clothing	75-1
References on Present Day Conditions Among U.S. Indians	75-2

References on Indian War and Warfare	75-3
References on Seminole Indians	75-4
Textiles in Suiting Everyone	75-5
Bibliography on Indian Lore, Crafts	75-6
North American Indian Periodicals	75-7
18th Century Clothing in Suiting Everyone	75-8
18th Century Garments—Black and White Photos	75-9
The Bermuda Triangle	75-10
Unidentified Flying Objects	75-11
Caring for Wild Birds	75-13
The Hope Diamond	75-14

NOTE: None issued under #75-12.

The Publications Section also has been concerned with the research and editing required by numerous reference book publishers planning to include mention of all or some of the Smithsonian's activities in their various publications. Both private publishers and governmental agencies are represented in the inquiries for reference book research.

Major events such as the opening of the Hirshhorn Museum and Sculpture Garden, the Festival of American Folklife, dedications of new exhibits, the television series, and pre-Bicentennial planning occupied much of the time of the News Bureau. During the year, 340 news releases were issued, twenty-two of which concerned Bicentennial events, and thirty-nine were about the Hirshhorn's first year of operation. In staffing, the effort toward decentralization continued with the National Collection of Fine Arts, the National Museum of History and Technology, and the National Museum of Natural History taking on the public affairs duties within their bureaus. Meantime, an increased effort to gain public notice for scientific research activities at the Institution was undertaken with the cooperation of the Assistant Secretary for Science.

The Special Events Staff assisted in the planning, preparation, coordination, and completion of approximately 675 special events during the year. These included lectures, presentations, conferences, symposia, meetings, openings of permanent or temporary exhibitions, concerts, coffees and teas, luncheons, dinners and receptions, dances, and miscellaneous events. In addition, the Staff also distributed some 600 Smithsonian-oriented posters

throughout the Institution and to various information booths operated by the National Park Service. The office supervised the production and distribution of about 75,000 printed pieces, including invitations, announcements, programs, and acceptances. A major event was the formal opening of the Hirshhorn Museum and Sculpture Garden, at which 15,000 guests were received over a four-day period. Among those in attendance at the various events at the Hirshhorn were Secretary and Mrs. Ripley, Ambassador Daniel P. Moynihan, Mr. and Mrs. Joseph Hirshhorn, and Mayor and Mrs. Walter Washington.

Special tours were arranged during the year for the Empress of Iran, Mrs. Nelson Rockefeller and her sons, and many other distinguished visitors. During the Festival of American Folklife, special tours were conducted for representatives of the People's Republic of China, George Meany of the AFL-CIO, and several groups of diplomats posted in Washington. Secretary of State Henry Kissinger was the host at a luncheon at Hillwood for the Shah and Empress of Iran. Secretary and Mrs. Ripley were the hosts at a luncheon for the Empress of Iran at the Hirshhorn Museum and Sculpture Garden and at a luncheon for Sir John and Lady Llewellyn, and a dinner for the Duke of Gloucester.

The Special Events Staff also worked closely with the Woodrow Wilson International Center for Scholars, the Senate of Scientists, and the Office of Museum Programs in arranging various special events throughout the year.

The "Free Film Theatre" continued its weekly offers of motion pictures relevant to Smithsonian interests with heavy attendance during the peak periods of visitation. Films that were presented generally concerned themes in the fields of history, art, and the natural sciences. The theater program was held in cooperation with the National Museum of History and Technology and the National Museum of Natural History.

Office of Smithsonian Symposia and Seminars

The Office of Seminars, formerly responsible for the Institution's advanced studies program established in 1967, was renamed the Office of Smithsonian Symposia and Seminars to reflect its pan-

Institutional activities and outreach. Under its new name it continues to develop broad educational programs and to serve as a resource facility for governmental and private organizations, as well as for universities and scholars.

Administration of the Smithsonian's international symposia series program in 1975 included publication of *The Nature of Scientific Discovery*, based on the fifth symposium developed in association with The National Academy of Sciences as the major American tribute to Nicolaus Copernicus celebrating, in 1973, the five hundredth anniversary of his birth. Edited by Owen Gingerich, astrophysicist at the Smithsonian's Astrophysical Observatory and professor of astronomy and of the history of science at Harvard University, the book comprises three major sections: the papers presented at the symposium, summaries of the adjunct *collegia*, and the Copernican festival. Supported by the National Science Foundation, the National Endowment for the Humanities, the Copernicus Society of America, and Exxon and other corporate contributors, the symposium provided a fresh examination of those elements conducive to scientific achievement, focusing on the Renaissance and on contemporary science and technology. The book is but one educational product extending the life and audience of the original activities of Copernicus Week.

Continuing its function as a Smithsonian resource facility, the office organized for the National Aeronautics and Space Administration a one-week seminar on the "Outlook for Space," designed to provide insight into the social-political-economic-cultural environment foreseen for the remainder of this century, to assist in planning future space research and exploration. Some thirty guest discussants and twenty-five scientists and astronauts from NASA participated in the meetings at Hammersmith Farm, the summer estate of Mr. and Mrs. Hugh D. Auchincloss at Newport, Rhode Island. As a result of the seminar, the office has been approached by the Preservation Society of Newport County and other civic groups and leaders to advise on ways and means to take advantage educationally of the architectural resources of their community for seminar and symposium activities. For example, the office is assisting in the planning of a Bicentennial symposium on the history of religious toleration and freedom in the United States which will make use of Touro Synagogue, Trinity Church, and other historic structures as settings for scholarly dialogues.



Participants in the "Outlook for Space" seminar take a break to enjoy the bracing October air at Hammersmith Farm, overlooking Narragansett Bay.

Owen Gingerich, editor of *The Nature of Scientific Discovery*, and His Excellency Witold Trampczynski, Ambassador of the Polish People's Republic, exchange felicitations at the May pre-publication party in the National Academy of Science's Great Hall.



Joining with the Institute of Psychiatry and Foreign Affairs and the State Department's Foreign Service Institute, the office developed a special series of seminars preparing a group of American doctors and medical specialists for an extended visit to the People's Republic of China, in which members of the Chinese Delegation to the United States participated. (In 1972 the three organizations were hosts to a medical group visiting the United States from China.)

Other seminars during the year were: a cooperative seminar on the Declaration of Independence, in association with Bryn Mawr College as part of the college's 1976 studies program for high-school newspaper editors throughout the United States, wherein students examined the language used in the document, relating it to the Revolutionary period and evaluating their own, present-day sense of it; "The Preconditions for Voluntarism," with discussion led by Robert A. Goldwin, special consultant to the President; and "Health Services and Community Participation: Comparisons in Two Cultures" (the United States and the United Kingdom), featuring Julian Knox, distinguished specialist in international health care.

The office also collaborated with the American Universities Field Staff in presenting a series of new films on human cultural adaptation, "Faces of Change," to the Smithsonian's new National Anthropological Film Center. The series was developed by AUFSS in consultation with the Center and contains 126,000 feet of research material.

Planning continued toward the Bicentennial symposium, "Kin and Communities: The Peopling of America," sixth in the Smithsonian's symposia series. Scheduled for 1977, a series of seminars, papers, films, workshops, and other activities will reflect on the role of family institutions and communities in shaping the Nation during its first two hundred years and as continuing links to African, European, Asian, and other cultures (including those of the American Indian) which have enriched American civilization. The Department of History, American University, is assisting in program planning and is developing a related project of gathering information on individual family histories for computer banking and data retrieval in subsequent studies by historians, anthropologists, and other scholars, as well as for stimulating self-knowledge on the part of those writing their family histories.

An international conference on "The United States in the World," is being developed jointly by the Smithsonian, the American Council of Learned Societies, and the American Studies Association as a contemporary study of American influence in other societies. The conference will focus on how we have affected—or not affected—others in science and technology, in politics and society, and in the arts and media. About two hundred specialists from other countries are being invited to come to Washington in September 1976 to participate in the meetings and associated activities, along with an equal number from the United States. A number of those from abroad are being asked to present analytical and objective papers, no attempt being made to solicit manuscripts arguing a particular point of view. The conference's goal is to find out just what differences two hundred years of American civilization have made in other parts of the world.

Reading Is Fundamental, Inc.

Reading Is Fundamental, Inc. (RIF) will celebrate its tenth anniversary during the Bicentennial year. Founded by Mrs. Robert S. McNamara as a national, nonprofit, tax-exempt organization, its program is designed to motivate children to read.

Its goals are: (1) to demonstrate that books—in the home as well as in the classroom—are essential to a child, and that books should be available to all children to own, borrow, and buy, and (2) to educate the American public to the fact that at the present time this is not the case and to show through RIF programs the exciting and cohesive force produced when educators and communities, parents and children, organize their resources and efforts to produce a more literate society.

The program is unique in that it stimulates the interest of children in books by letting them choose from a wide variety of attractive, inexpensive paperback books that appeal to them, and by letting them keep the books as their own.

The growth of interest and tastes are clearly evident as RIF programs go on from year to year. Faced with a wide choice of books at their first distribution, youngsters tend to pick up what is familiar

—comic books, for example, like *Batman*. But in a very short time, they are to be seen browsing, not snatching at whatever comes to hand. In one project years back, the children all selected a popular comic. But a year and a half later, the majority of them were reading *Charlotte's Web*.

One of the more interesting discoveries was the enjoyment by young children of well-illustrated Bible stories. A project director commented, "It's not surprising. After all, stories like David and Goliath, Joshua at the Battle of Jericho, and others are really exciting. The children love them."

Since its founding in 1966, more than two million children have received five million paperback books. Presently, 367 RIF programs are operating in forty-six states (including Alaska and Hawaii). They are locally operated and funded through either private sources or moneys for books from federally funded supplementary programs. Seven thousand parents and community leaders have been mobilized as volunteers to implement RIF programs. Teachers report children are reading more, exchanging books with their friends, and building home libraries. Both school and public library circulations have increased markedly where RIF operates. Parents are actively involved in RIF programs and are buying books for their children, reading to them and reading themselves.

The impact of RIF on libraries alone was clear this year and last when the New Mexico State Library Commission sponsored the first RIF project to be funded by a state library.

After the 1974 summer project, the Commission, in a survey to determine RIF's impact, found that "each library involved with RIF indicated a registration increase among their children."

The survey also showed that "other benefits from the program have included a better working relationship between libraries and schools; increased interest in the library by parents; expanded participation of children in other library programs."

Public demand for RIF's program increased dramatically during the past year. In fiscal year 1974 there were 12,000 requests for RIF's services, and by May 1975 more than 25,000 such requests. The number of RIF projects increased from 292 in fiscal year 1974 to 367 as of June 1975.

RIF projects range in size from the big New York City program that gets books to almost 80,000 youngsters to a small one for



This photograph is eloquent proof of the success of RIF's summer Bookmobile Program in the District of Columbia. (Photo: Courtesy the *Washington Star*).

130 Indian youngsters in Mandaree, North Dakota. Sister Patricia Carroll, of Mandaree School District #36, reported, "RIF has been an agent of joy to our school. The teachers have been so enthusiastic and grateful for the program and the children constantly beg for another RIF day. We have been happier people because of RIF."

With the prevailing economic situation, RIF reduced its budget by approximately 25 percent. To meet the paradoxical situation of a reduced budget while maintaining quality service to an increasing number of projects, RIF undertook two major steps. A national corporate fund drive was successfully developed and, to serve new programs, RIF initiated an expanded leadership development and training program, thus assuring the most economic use of time of its small field staff while helping to multiply their effectiveness and field coverage. Volunteers were trained in group cluster meetings to develop new RIF project leaders. In May 1975, 125 program

directors, parents, and community volunteers from twenty-one states and the District of Columbia attended RIF's second National Workshop for leadership training and development.

RIF's program was endorsed by the United States Commissioner of Education, Dr. Terrel H. Bell, and it continued its cooperative activities with the United States Office of Education's Right to Read program. The United States Office of Education awarded RIF a grant of \$80,000 for the establishment of a National Resource and Training Center for reading-motivational programs.

RIF's Board of Directors, under the leadership of its current Chairman, Mrs. Robert S. McNamara, and President, Dr. Sidney Nelson, are planning a special Bicentennial program which has been endorsed by the American Revolution Bicentennial Administration. Its goal is to double the number of RIF projects by 1977, enabling it to serve five million children who will have received twenty-five million books.

Vice President Nelson A. Rockefeller will participate in the official launching of RIF's Bicentennial Program which will be held on Citizenship Day, September 17, 1975, at the National Archives. Children from various ethnic backgrounds who have made significant progress through RIF reading motivational programs and their parents will be invited to attend and read portions of the Declaration of Independence, the Constitution, and the Bill of Rights.

A unique book entitled, *Our Collective Gift to this Nation*, will be published for RIF by Doubleday. Eliot Wigginton, President of the Board of the Foxfire Fund, Rabun Gap, Georgia, will direct the project and edit the book. It will be composed of interviews conducted by hundreds of high school students representing most of the cultural groups in this country. The subjects for their interviews will be older people—in many cases their relatives—who live in their communities. Mr. Wigginton describes the book as an opportunity for our grandparents to speak from their special perspective—"a forum where men and women from every culture can come together to express, through their grandchildren, their hopes and fears for us as a nation, and their dreams for us as a world."

RIF will also publish a Bicentennial RIF Guide to Book Selection which will offer a comprehensive list of annotated paperback books selected from the offerings of approximately one hundred publishers.

Appropriate Bicentennial programs will be undertaken by the local RIF projects throughout the country to underscore the importance of education and to highlight the significance of reading achievement in securing that education.

Reading Is Fundamental is based in the Smithsonian Institution with offices at L'Enfant Plaza. The Smithsonian acts as RIF's fiscal agent.

Smithsonian Associates

The Institution's membership program of the Smithsonian Associates was essentially designed for Washington area residents until the spring of 1970 when publication of the *Smithsonian* began. As a principal benefit of membership, the monthly magazine so stimulated interest in the program as to increase the Smithsonian Associates to more than 900,000 members across the country.

SMITHSONIAN NATIONAL ASSOCIATE PROGRAM

A developing activity for Associates is the travel program. During fiscal year 1975, more than 1400 members took a foreign charter or domestic study tour arranged by the Associates travel office, and some 12,500 were interested enough in the plans to ask for details.

In this country there were group visits to such places as Death Valley to study the geology of the national monument, Arizona to study the Hopi and Navajo cultures, and to Mississippi to tour antebellum houses in Vicksburg, Port Gibson, and Natchez. In January the Washington "Anytime" Weekend was added to the travel program as a new benefit, and was designed to give National Associates the opportunity to visit Washington and the Smithsonian any weekend during the year.

The Smithsonian Associate Foreign Charter Program was established in fiscal year 1975. One charter flight was sent to England and two flights went to the Soviet Union. In the Union of Soviet Socialist Republics, members attended lectures with curators at the Hermitage and Pushkin museums as well as the Tretyakov Gallery before breaking into small guided tours of the facilities. Addi-

tionally, members participated in many small group discussions at the Leningrad-Tallinn and Moscow Houses of Friendship. In England members enjoyed seminar visits at the Greater Council of London, a variety of museums, and a number of the great houses and archeological sites.

Another innovation of the year, in January, was the first regional programming for the benefit of Associates in their own places of residence. In collaboration with the University of Houston, 7500 Associates from the Houston and Bellaire areas were invited to see a display of the French royal jewels from the collection of the National Museum of Natural History. Nearly 3100 members turned out for the program, and Curator Paul E. Desautels lectured four times instead of the scheduled two to accommodate the unexpected crowd.

Later in the spring, a similar exhibit was presented on the premises of the First National Bank in Palm Beach, Florida. Several hundred Associates inspected the gems and were guests at a reception for Secretary and Mrs. Ripley.

On the strength of the interest shown in these events a series of others were planned for Associates in various parts of the country.

The system of discounts on purchases from the Smithsonian Museum Shops and the Smithsonian Press continued to be widely used by the Associates.

VISITOR INFORMATION AND ASSOCIATES' RECEPTION CENTER

The Center's Information Volunteers continue to act as the Institution's special emissaries of goodwill, providing the human interface between the Smithsonian and visitors or potential visitors to the national collections seven days a week. Whether by phone, in person, or by mail, Volunteers have cheerfully applied themselves to the task of providing the most explicit and thorough directions, information, and/or data requested.

This year 119 new Volunteers were recruited and trained, thirty-eight of whom were given special instruction to serve the new Hirshhorn Museum and Sculpture Garden. Three major museums on the Mall (MHT, MNH, HMSG) now rely on the Information Volunteer Desks to serve as the place where individuals with staff ap-

pointments may have their appointments confirmed and be issued the required security badges. This procedure, as well as being the liaison for tour groups and docents, is in addition to assisting the hundreds of thousands of visitors seeking aid. Increased duties as well as preparation for the Bicentennial year have demanded double- and triple-staffing numerous Desks. The overall percentage of Desk coverage for all Mall museums (with the exception of the Freer and the inclusion of the off-campus Renwick) has been 90 percent for the past year.

Telephone traffic continues to escalate, up 38,000 or 30 percent over 1974's 125,000 calls.

Mail handled through the Center also reflects a substantial increase—33,500 pieces processed over last year's 22,000. National Associates' mail still accounts for approximately 50 percent of all that is received. Subject matter is usually multiple in nature, taking a substantial amount of time to research and answer properly. All special book offerings for Associates were also channeled through the Center, as well as maintenance of the Smithsonian Calendar of Events file.

The first foreign-language informational tape system was installed at both entrances of the Museum of History and Technology and the Mall entrance of the Museum of Natural History. The three-and-one-half-minute orientation is available in German, French, and Spanish as indicated by color-coded phones.

A visitor-orientation slide-show with captions in English, German, French, and Spanish was installed in the Great Hall of the Smithsonian Institution Building. This visual aid is intended to give visitors a directional sense of the Smithsonian's Washington complex.

Volunteer Certificates of Appreciation and Service Pins were distributed through the Center for museums or galleries requesting them for their Volunteers. The most impressive program by far was that of the Smithsonian Astrophysical Observatory with over 300 International Moonwatch Volunteers, some of whom have been working since 1956.

Some 10,300 National Members registered in the Center this year, a figure that is somewhat misleading in terms of the actual number of member families served. Our space for the majority of the year was so restricted that many Associates simply picked up their informational literature and went on their way. This situation

has been relieved with the present renovation of the Smithsonian Institution Lounge as an Associates' rest and relaxation area.

The Commons, at long last, was opened for Associates on weekends, and is operating quite successfully.

A docent program was established to provide National Members participating in the Washington Weekend trip package an exclusive tour of the "Castle." The Weekend package and the tours have proven extremely popular, with an average of thirty families per weekend.

Membership registrations were not as numerous as expected, primarily due to the new Resident processing procedure which eliminates on-the-spot processing in the Center. The Center handled 721 new National and 1207 new Resident memberships.

A handsome informational brochure for visiting Associates was introduced this year.

The Museum Reference Service is concentrating on the compilation of material relative to the thirteen original colonies for use by Associates traveling the Eastern Seaboard.

The employee National membership and gift file continues to flourish.

Independent Volunteer placement has experienced significant growth, resulting in some 250 placements for 42,000 hours of service.

Official recognition of individual Volunteer service throughout the Institution appears this year for the first time in this report; see appendix 14.

SMITHSONIAN RESIDENT ASSOCIATE PROGRAM

The Smithsonian Resident Associate Program was established in 1965 by Secretary Ripley to provide the opportunity for residents of the Greater Washington area to participate in the life of the Institution. Through its educational activities, for adults and young people, it has attracted a local membership of 33,500 through May 1975 as compared with 22,000 in May 1974, and over four times the membership of May 1972. The membership figure represents over 75,000 individuals. The purpose of the Program, as defined by Secretary Ripley, is to "serve as a link between what the Institution does, whether in museum or laboratory or art gallery pro-



Ora Van Beek, Deputy Director of the Smithsonian Archeological Expedition Dig at Tell Jemmeh teaching a Young Associates archeology class.

grams or research and publications, and what the public in the Washington area can do to participate." It seeks to achieve this goal with classes in arts, sciences, humanities, and crafts; study tours within the Smithsonian bureaus and nearby complementary facilities; special lectures; seminars; film series; exhibition previews; outdoor festivals; art poster projects; and performing arts events.

In recent months, increased cooperation with Smithsonian bureaus has enabled the Resident Associate staff to conceive and execute a program broad enough to accommodate its rapidly expanding membership with differing interests and aspirations. The *Associate*, the monthly newsletter sent to all members, continues to serve effectively as the Program's communication vehicle.

In proportion to the membership growth, the staff has grown from twenty-six at the end of fiscal year 1974 to thirty-one by the end of fiscal year 1975, primarily in support personnel. The Program continues to make a sizable contribution to the unrestricted



Noted violinist Yehudi Menuhin, a Resident Associate lecturer, discussing a composition with James M. Weaver, Associate Curator of the Smithsonian's Division of Musical Instruments.

private funds of the Institution while the membership dues and activity fees have remained constant. With the reallocation of space in the Arts and Industries Building, the Resident Associate Program has moved to new and more spacious quarters, refurbished with its own funds. Further, to replace the unsightly wooden structures where most studio classes have been held in previous years and which are to be razed in the summer of 1975, three new multi-purpose classrooms for Resident Associate classes only were designated in the Arts and Industries Building. The National Museum of Natural History will be sharing with the Program four other new classrooms now under construction. These new spaces should enable the program to offer instruction in more attractive and appropriate surroundings.

During fiscal year 1975 the Program embarked upon a number of new projects or continued special projects recently undertaken. With the cooperation of the Hirshhorn Museum and Sculpture Garden, the Resident Associate Program commissioned and published a series of two serigraphs and four posters commemorating the opening of that Museum. Sold through the membership, the magazine *Smithsonian*, the Museum Shops, and government agencies that distributed the art works throughout the world, the enterprise is successful financially and esthetically, and is a good method of furthering public awareness of the Hirshhorn Museum and Sculpture Garden.

From the proceeds of this project, (1) 415 scholarships were awarded, on the basis of need and interest, to inner-city children, enabling them to attend Associate classes free of charge; (2) free tuition was provided for forty docents from six Smithsonian museums to attend classes in the field of their special interests; and (3) a generous contribution was made to the Hirshhorn Acquisition Fund.

The Program sponsored a three-day festival in Video Art assisted by a grant from the National Endowment for the Arts. It conducted a four-day seminar at the request and under the sponsorship of the Office of Smithsonian Museum Programs on "Developing a Museum-Oriented Curriculum for Adults and Children," for twenty-three museum staff members from museums located throughout the United States. Follow-up evaluation indicated that the participants found the experience particularly valuable.

A television public service announcement was conceived by the staff, produced by the Smithsonian's Exhibits Motion Picture Unit, and released in August 1974. Widely shown on local television, it was declared a finalist in the CLIO awards competition of the American TV and Radio Commercials Festival. The Second Annual Photography Contest attracted 125 entries from members in three categories: Adult, Teen, Under 12. The subject matter was limited to Smithsonian buildings or collections; the judges were appropriate members of the Smithsonian curatorial and photographic staffs. Three prizes were awarded in each category.

The number of lecture classes for adults in the arts, sciences, and humanities increased substantially over 1974. Taught by Smithsonian and visiting scholars, 105 classes in these areas were

scheduled in the four terms this fiscal year. A total of 215 adult classes, including studio classes, photography, and workshops, were scheduled for adults during the fiscal year, with an enrollment of 7778 students, as compared with 179 classes with 6405 students in fiscal 1974. Of the lecture classes, those in anthropology, archeology, architecture, and graphic and interior design were the best attended. Classes in photography surpass all other studio classes in enrollment.

Through the Trips and Tours section of the Program, members greatly enjoyed scholarly tours of Smithsonian exhibitions and visits to nearby cultural, historical, or scientific locales. This year there were 354 on-site learning experiences, 100 of which, with 6275 attendees, carried no fee. A total of over 17,000 members participated in these activities led by Smithsonian or other qualified scholars. Among the most popular tours were those that enabled members to explore facets of the Institution: a "Behind the Scenes" tour in the National Museum of Natural History attracted over 1500 members; 400 members took guided tours of the "Hearts and Minds of the People" exhibition at the National Portrait Gallery; 125 enjoyed luncheon-hour talks at the Freer Gallery of Art, and 386 were guided through the Hirshhorn Museum and Sculpture Garden. All tours are limited in size; many have to be repeated as often as twenty-four times to accommodate requests.

The Special Events component of the Program includes lectures, seminars, and symposia conducted by distinguished Smithsonian and visiting scholars. Outdoor festivals, film series, and performing arts are also integral. During fiscal year 1975, seventy-three special events were attended by over 18,000 people. The Program has developed a new cooperative series of symposia with the Woodrow Wilson International Center for Scholars, scheduling four per year. It is also offering film programs in cooperation with the National Anthropological Film Center, illustrated lectures in cooperation with the Audubon Naturalist Society, and opportunities for members to increase their appreciation of the performing arts at the John F. Kennedy Center for the Performing Arts, through special lectures arranged in conjunction with performances. Twenty special events were offered free to members only.

The Young Associate programs extend the resources of the Institution to members' children (as well as the scholarship children



A popular learning trip of the Resident Associate Program is a walking tour of Georgetown.

noted above) through classes and special activities. The programs offer learning experiences appropriate for specific age groups; the students' ages range from four years to eighteen. Over twenty classes are offered each of the four academic terms. This year the Program, in a cooperative venture with the National Museum of Natural History, underwrote a Junior Science Club, open equally to members' children and public school scholarship participants. The club meets weekly to work intensively on projects at the Museum under the supervision of a curator. Each month the new Career Workshops offer the opportunity for high-school-age members to learn about museum careers. Younger Associates enjoy the monthly free films and other performing arts programs as well

as courses and workshops. The annual holiday party attracted over 1000 youngsters. Over 11,000 young people have participated in the Young Associate activities this past year.

There are over 4500 family memberships, and special activities are regularly geared to family participation. The annual Zoo nights, and the Boomerang and Kite Festivals are eagerly anticipated in addition to mushroom hunts, train trips, fossil digs, visits to Chesapeake Bay Center for Environmental Study, Silver Hill, farm excursions, and other appropriate indoor and outdoor tours. Forty-four family events were scheduled in fiscal 1975, not including special activities for the children of family members.

In addition to the activities mentioned above, members are offered many intrinsic benefits. During fiscal 1975, the opening of the Hirshhorn Museum and Sculpture Garden provided the opportunity for two gala special Associate openings. Two other special exhibition viewings were held at the National Collection of Fine Arts and the National Museum of History and Technology. A free lecture given by a Smithsonian curator is offered monthly, as well as other free special lectures. Over 42,000 attendees were recorded at free membership events in fiscal 1975. The *Smithsonian* magazine, the monthly newsletter the *Associate*, and the Smithsonian calendar are membership benefits, as well as the privilege of eating in the Commons of the "Castle," discounts in the Museum Shops, and parking in the Smithsonian parking lots on weekends, holidays, and evenings. Members obtain reduced fees on all activities.

Two hundred and eighteen Volunteers work for the Resident Associate Program on a regular basis. Their responsibilities vary from office duties to monitoring classes. This June these Volunteers were feted at a reception, to express appreciation of their work on behalf of the Program and the Institution. Certificates were awarded.

During fiscal year 1975 staff members of the Program received Certificates of Award from the Institution in "official recognition, and appreciation of exceptional services rendered in the performance of duty."

Smithsonian Magazine

The magazine *Smithsonian* celebrated its fifth year of publication with the issue of March 1975. The extent to which the reading public and the advertising community have responded to the unique offering of scientific and cultural articles which *Smithsonian* presents have made it the fastest growing of all monthly magazines in the country, according to recent articles in the *Wall Street Journal* and *The New York Times*. Circulation during the year increased from 600,000 to 900,000; advertising pages increased from 450 to 600. Thanks to this growth, the magazine again made a substantial contribution to the unrestricted private funds of the Institution.

In a recent issue of *The New York Times*, Philip H. Dougherty in his media column pointed out that *Smithsonian* was among the top six of 100 national consumer magazines to show an increase of more than 10 percent in advertising pages during the first six months of 1975 over the year earlier period. To quote Mr. Dougherty:

Thomas H. Black, ad director of *Smithsonian*, a publication of the Smithsonian Institution, is accustomed to being asked "How come you're doing so good?" because the magazine has been growing steadily since it started in 1970 and is up 47.8 percent in the first half.

Asked to give a speech on the subject last January, he chose for his title, "It's amazing what happens when you go back to the basics."

"The basic basic," he said the other day in his office, is a good editor and he is convinced his magazine has a great one, Edward K. Thompson, previously managing editor of *Life*.

"First the editor does his job well," Mr. Black said. "Then the circulation department does its job well. And then the advertising department does its job well, and you can't speed up that function."

His pitch and the pitch of the rest of the six-person New York sales team is that the 900,000 or so who buy the magazine monthly have an average annual income of \$33,793 and are responsive.

Among the editorial innovations of the year were a pair of two-part articles. The first of these, by Russell Lynes, celebrated the



An illustration from *Smithsonian* magazine article by Don Moser, "Barro Colorado is a Noah's ark in the rain forest," shows college student Gary Martini climbing a gigantic ceiba tree toward forest canopy. Smithsonian Tropical Research Institute has headquarters on Barro Colorado Island in the Panama Canal. (Photo: Courtesy George Silk)

opening of the Hirshhorn Museum and Sculpture Garden. The second, by Tom Alexander, was an up-to-date report on the revolution in geology stemming from the theories of plate tectonics and continental drift. Elaborately illustrated with maps and diagrams created especially for *Smithsonian* by Richard Edes Harrison and Antonio Petrucelli, this two-part article has been combined into a single twenty-four-page pamphlet and made available to schools, libraries, and the general public.

The magazine's prelude to the Bicentennial, the monthly column called "200 years ago," ended with the eruption of the revolution in Concord and Lexington. The eighteen installments of the column have also been combined into a booklet for sale to the public, and a new regular feature inaugurated: A monthly column, "On the Mall and Beyond," which takes readers to behind-the-scenes events in the Institution's many bureaus here and abroad.

Spectacular color photographs of Scythian gold objects were made in the Soviet Union by Lee Boltin in order that a *Smithsonian* article could appear just before the collection went on display in the Metropolitan Museum of Art in New York. In another international effort, Photographer Ernst Haas traveled to remote Bhutan to show the historical aspect of the coronation of its teenage king.

The magazine continued its coverage of the related subjects of energy, environment, and technology. An earlier article on solid-waste management—particularly the currently controversial subject of bottle-and-can recycling—won first prize in the media awards of the National Association of Recycling Industries. A discussion of waterless water closets stirred up a small flood of response from readers. A timely and balanced story on ozone, its effects in the atmosphere and on the earth's surface, helped guide readers through the later conflicting governmental and press reports on the subject.

Smithsonian Institution Press

Since the mid-1950s, the proliferation of Smithsonian publishing activities has enjoyed a Topsy-like growth. In 1965 the Press' work drew from twenty separate bureaus and departments; by 1975, seventy-one units were availing themselves of editorial and pro-

duction services for everything from simple folders to catalogues and monographs of several hundred printed pages. This increase in demand for Press services has been welcomed as an indication of the Smithsonian's growing role in the diffusion of knowledge, but it has inevitably led to problems of overtaxing the Press' capacity to perform to everyone's satisfaction. Over the years, more and more Smithsonian staff members have been publishing independently of the Press, while at the same time the annual deficit for privately funded Press publications has increased. Under the chairmanship of the Assistant Secretary for Public Service, the Publications Review Board—overseers of Press policy—began fiscal year 1975 determined to take a hard look at where we are and where we are going. It hired the management consulting firm of Boutwell Crane Moseley Associates, specialists in publishing management, to come in and survey the workings of the Press and the Institution's publishing programs.

Boutwell Crane Moseley Associates' major conclusions, reported in late spring after three months of intensive study, are:

1. All publishing activity within the Institution needs to be coordinated.

2. The Smithsonian Institution Press is not staffed or funded adequately to conduct a financially profitable trade-book publishing program.

3. The Smithsonian should be making available to its visitors and the general public a much wider diffusion of information pertaining to its collections and research, and this should be accomplished through attractively presented, moderately priced publications. Since the Press is not organized or funded to produce such materials, arrangements should be initiated for partnership agreements with interested commercial publishers who have the capability and the interest to carry out these possibilities.

4. The Smithsonian Institution Press should confine its activity to providing design, editing, production, warehousing, and distribution services for federally funded manuscripts (serials and general publications) that are sponsored by Smithsonian museums and galleries.

Within the next fiscal year, the Press will be reorganized to reflect these recommendations. An anticipated move of quarters into the Natural History Building will take place during the summer,

with office space allotted in conformance with overall plans for new staffing requirements.

In the year just past, the Press continued to provide editorial, design, and production services for a wide range of publications. The output, listed in Appendix 5, represents 9 trade books, 16 art and exhibition catalogues, 84 booklets, pamphlets, and folders, plus 58 monographs published in the scientific and technical series.

Favorable critical reviews—an all-important factor in a book's success—have contributed to sell-out first editions of *The Outdoor Sculpture of Washington, D.C.* (paperback) by James M. Goode, Curator, Smithsonian Institution Building, and *The Peoples and Cultures of Ancient Peru* by Luis G. Lumbreras, translated by Dr. Betty Meggers of the Department of Anthropology, National Museum of Natural History.

Further recognition of the Press' role in its publications has come again in annual awards for editing and design. For the second year in a row, Smithsonian publications were among the top winners in awards presented by the Federal Editors Association. Appropriate certificates for differing categories were presented to Nancy Link Powars for *The Outdoor Sculpture of Washington, D.C.* and *A Standard of Excellence* by David G. Finley; Hope Pantell for *Suiting Everyone: The Democratization of Clothing in America* by Claudia Kidwell and Margaret C. Christman (National Museum of History and Technology); Joan Horn for *The Peoples and Cultures of Ancient Peru*; John S. Lea for *First Steps Toward Space* by Frederick C. Durant (National Air and Space Museum); and Mary Frances Bell for *The Burrowing Sponges of Bermuda* by Klaus Ruetzler. *Smithsonian Year, 1974*, designed by Crimilda Pontes, won special recognition in the American Association of University Presses 1975 Book Show; also in the show was *Steinberg at the Smithsonian*, designed by Stephen Kraft.

During the year, production costs of 176 publications were funded by federal appropriations in the amount of \$298,000; 9 trade publications were supported wholly by Smithsonian private funds in the amount of \$130,100. The Press and the Superintendent of Documents shipped, on order and subscriptions, a total of 166,873 publications and 104 records. In addition, 10,000 art catalogues and miscellaneous items were distributed.



Five greenhouses leased from the United States Soldiers' and Airmen's Home by the Horticultural Services Division, Office of Plant Services, Support Activities.

ADMINISTRATIVE MANAGEMENT

UNDERLYING THE SUCCESS of the many projects and programs of the Smithsonian Institution is a vast network of supportive activities and general administrative functions. The timely and efficient execution of these undergirding operations enables the Institution to fulfill its mandate to increase and disseminate knowledge. The following reports for fiscal year 1975 of the organizations which make up "Administrative Management" encompass an impressive array of on-going activities.

Support Activities

This past year Support Activities progressed steadily toward its goal of providing timely and quality support for all Smithsonian programs. The year brought the first significant increase in budget resources allocated to Support Activities units, in line with recommendations developed at the first Institutional Priorities Conference held at Belmont in February 1973. Management studies begun in fiscal year 1974 continued this year in the central support units, to determine whether the organization, functions, systems, and procedures of these units are structured to provide the desired service. Management studies were initiated and/or completed in the Office of Supply Services, Office of Printing and Photographic Services, Office of Personnel Administration, Travel Services Office, and the Office of Computer Services (formerly Information Systems Division). In addition, special direction and attention were provided the Office of Facilities Planning and Engineering Services

and the Office of Plant Services in completing the establishment of their units as a result of the reorganization of the former Buildings Management Department in fiscal year 1974.

In summary, fiscal year 1975 saw Support Activities appraising and redefining itself in order to find new and better methods to build on its traditional strengths. The success of the Smithsonian in 1975 in meeting its mission "to increase and diffuse knowledge" is an indication that Support Activities is meeting its goal of providing timely and quality support.

The central support group is comprised of the following twelve organizations: Management Analysis Office, Office of Equal Opportunity, Office of Computer Services, Office of Facilities Planning and Engineering Services, Office of Personnel Administration, Office of Plant Services, Office of Printing and Photographic Services, Office of Protection Services, Office of Supply Services, Contracts Office, Travel Services Office, and the International Exchange Service. Brief summaries of the major activities and accomplishments of these organizations are given below.

MANAGEMENT ANALYSIS OFFICE

The Management Analysis Office provides: (1) research and analysis of policy and procedures and administration of management improvement programs; (2) a central point for the operation of a system of review, control, and coordination of management issuances before and after publication; and (3) economical and efficient management and acquisition of printed forms.

A commendable number of significant projects completed or initiated during the year included publishing new staff handbooks on correspondence, automatic data processing, and identification credentials, and a second edition of the requisitioning handbook. At year's end, the handbook on travel is in final draft with publication anticipated early next fiscal year.

In March, one of the two management analysts available in the Office for special management studies was assigned to work with the Office of Audits on a review of the system for purchasing, receiving, and paying for goods and services. This effort is expected to continue into the next fiscal year.

The Administration's concern regarding reports management caused an appreciable increase in the Office's work, which was

particularly evident in the areas of reports required by federal agencies and the Congress, as well as in Smithsonian reports involving members of the public.

During the year, the Management Analysis Office gave careful scrutiny to all management materials to assure their compliance with the Freedom of Information and the Privacy Acts of 1974.

These activities, accomplished without an increase in staff, are indicative of the continued expansion of the work load and responsibilities of the Office.

OFFICE OF EQUAL OPPORTUNITY

The Equal Employment Opportunity Program continued to grow over the past year. Clear visibility was maintained by distributing and posting the new EEO Plan of Action, EEO publications, information about training programs, and memoranda about various EEO matters, including rights and remedies existing under the 1968 Fair Housing Act. A capstone was reached when the United States Civil Service Commission's Director of Federal Equal Employment Opportunity congratulated the Smithsonian Institution Equal Opportunity Office on the 130-day average processing time of complaints and noted ". . . the timeliness of your complaints processing." The federal average for processing was 21 days above the prescribed 180-day limit. The complaints system has been highly responsive to employee needs. Some 200 inquiries were handled in 1974, with 8 formal complaints being filed.

Upward Mobility Programs now are operating in the Freer Gallery of Art, National Air and Space Museum, National Museum of Natural History, the Office of Plant Services, and two are at National Museum of History and Technology. These programs give participating employees the opportunity to achieve their highest potential and productivity.

Seven new counselors were appointed—one at the National Collection of Fine Arts, two at the National Museum of History and Technology, two at the National Zoological Park, and two at the Smithsonian Astrophysical Observatory. Eight new EEO officers were appointed which brings to eighteen the number of individuals responsible for the respective eighteen major organizations. All of the officers received one full day of concentrated training at a seminar conducted by the Office of Equal Opportunity and the

Office of Personnel Administration. Since May 1973, over 168 supervisors have received training pointed toward a better understanding of their respective EEO responsibilities.

The Women's Program continued its uninterrupted growth. The Smithsonian Institution Women's Coordinator was appointed as Smithsonian representative to International Women's Year, a United Nation's observance, and the Institution held its second successful Women's Week in August 1974. The Women's Council elected and had appointed its first and second males to membership.

A new Sixteen-Point Program Coordinator was appointed and trained to serve as the focal point for advising Smithsonian management and the Director of Equal Opportunity on the special concerns of our Spanish-speaking staff. Assistance was provided in assessing the Smithsonian Institution Spanish-surnamed employment situation, and information about participation in eliminating systemic barriers for Spanish-speaking citizens was promulgated.

The first federal female supergrade was appointed. There were other appointments of minority and female managers and supervisors, as well as other key staff persons. A total of 1094 racial minorities, employed at the end of June 1973 out of a work force of 3050, increased to 1252 by the end of March 1975, out of a work force of 3584. Racial minorities and women each currently comprise over one-third of the Smithsonian Institution's work force. Women comprise 12.1 percent of all Smithsonian Institution employees at GS-13 and IS-13 and above, and this is far above the government average. Minorities, however, comprise 4.5 percent of all employees at that level, and this is slightly below government averages. Of 361 permanent professional core positions of Curator or Curator equivalent (Anthropologist, Biologist, Zoologist, etc.), only 13 are minority (3.6 percent).

OFFICE OF COMPUTER SERVICES

The Information Systems Division has been renamed the Office of Computer Services (ocs). While both designations are applicable in the area of automatic data processing and its associated services, the new designation will define more accurately the responsibilities and functions of that office within the Institution.

Progress continues to be made through the use of computer

technology in the areas of administration, management of the national collections, and scientific research.

ocs recently installed a computer communications-processor to give the Institution the capability of remote job entry processing to and from various locations. A remote terminal was installed at the Fort Pierce Bureau to service their data-processing needs for scientific research. Plans are underway to expand this remote terminal capability to the National Museum of Natural History.

Several key-to-disk video terminals were installed during the year to be used primarily for interactive data conversion. The use of optical reading devices and services continues to expand as another way to reduce the data conversion problem.

The Smithsonian's automated collections management system called SELGEM continues to arouse attention within and outside the Institution because of its potential as a standard for computerized management of collections. Fifty data managers use it to process more than 200 various Smithsonian collections and about 110 persons at 40 other museums or universities also use it. The ocs publishes information about the SELGEM system in its technical bulletin *Smithsonian Institution Information Systems Innovations*. The *Innovations* series acquaints the reader with automated systems and procedures specifically designed to solve collection and research problems in museums and herbaria.

Individual research assistance to curators and scientists continues to be expanded and broadened as they become more aware of the feasibility of applying mathematical/statistical analysis and computer technology to their research problems.

OFFICE OF FACILITIES PLANNING AND ENGINEERING SERVICES

Fiscal year 1975 marked the first full year of operation for the Office of Facilities Planning and Engineering Services (OFPEs). A major effort was made to improve staff capability in the architectural and engineering disciplines to meet the increasing demand for professional services. Improvements were made in contract administration, estimating, and planning functions.

Based on construction dollar value, office services in fiscal year 1975 increased over fiscal year 1974 by 100 percent. Project volume showed a 38 percent increase over the preceding fiscal year. Several major projects started or constructed during the year in-

cluded: Carnegie Mansion renovation; Natural History Building's West Court facility and East Court Osteology Laboratory; Anacostia Neighborhood Museum Exhibit Production Laboratory; dormitory facilities at the Chesapeake Bay Center for Environmental Studies; Natural History Building's escalator and North Foyer alterations; Arts and Industries Building renovation; major fire detection systems for five museums; Jefferson Island bulk-heading; Buildings #24 and #25 at the Silver Hill facility; South Yard development; and Third Floor renovation at the Fine Arts and Portrait Galleries. In addition, OPES provided consulting and professional services for eighty-five projects, including major exhibit installations.

Preliminary action has been taken to initiate long-range planning studies for the Chesapeake Bay Center for Environmental Studies in Maryland, the Smithsonian Tropical Research Institute in Panama, and the Mt. Hopkins Observatory in Arizona. Efforts also were directed to assisting in basic planning for the Museum Support Facility to be located at Suitland, and consideration was given to the needs of the Hirshhorn Museum and Sculpture Garden and the National Air and Space Museum. A continuing effort also was made with program units to develop procedures tailored to their special needs.

With the substantial demands for services, OPES is directing its efforts to improving communication with museums and bureaus and to providing more effective management of its activities.

OFFICE OF PERSONNEL ADMINISTRATION

The Office of Personnel Administration is responsible for recruitment and placement, position classification, training and career development, employee relations, labor-management relations, and equal opportunity as it relates to personnel management. The Office also has the responsibilities for implementing new laws and policies and making contributions to Smithsonian-wide efforts, such as reducing personnel costs.

Activity increased in virtually every program. More than 1200 recruitment requests and 8000 job inquiries and applications were received, and 1789 accessions and 1342 separations processed.

Negotiations with the United States Civil Service Commission resulted in the issuance of a police officer examination announce-

ment for the Smithsonian Institution. This announcement—a new method of announcing recurring vacancies—significantly reduced the time lag between advertising vacancies and filling the positions.

As a result of the implementation of the formal position classification program, position descriptions for the Institution were reviewed and new descriptions were prepared where necessary.

Labor-management relations continued to reflect mutual respect and cooperation. Negotiations for a multi-unit labor agreement were concluded after difficult bargaining, and consultations were held with the unions on a number of subjects in accordance with existing agreements. Also, formal grievance and complaint procedures were utilized in several instances, and these problems were resolved subsequently.

Ten new courses were offered by the Training Office for both professional and support staff. These courses ranged from Labor Management Relations to English Usage Refresher and Filing for Secretaries. In addition, courses of a more general nature were offered, such as General Education Development (leading to a High School Equivalency Certificate), and, for female employees, the Sexual Assault Prevention Program was conducted by the Smithsonian Office of Protection Services. Another new course was the Career Planning Workshop which was open to professionals and nonprofessionals alike. These courses, coupled with the regular courses, enabled us to offer training to 1433 employees in the last year: 591 in courses offered in-house, 828 in courses outside of the Smithsonian, and 14 in executive development courses.

The Office of Personnel Administration initiated action to develop a Guide for Private-Roll Personnel Management. Policies are being assembled and updated, personnel procedures and practices reviewed, and the needs and problems of the various activities identified and evaluated. The objective is to promote more effective personnel program operations by providing a comprehensive source of authentic information and guidance on private-roll personnel management and administration.

OFFICE OF PLANT SERVICES

The Office of Plant Services (OPLANTS) has basic responsibility for the operation and maintenance of Smithsonian physical plant

and associated utilities distribution systems; support of bureau research, exhibition, and educational programs; local and long distance telephone and teletype communications; transportation of personnel, freight, museum specimens, and art requiring special handling; off-Mall storage of the Smithsonian collections; grounds and pavement maintenance; landscaping and greenhouse operation in the development of horticultural exhibit areas; housekeeping services and building management for various off-Mall owned and leased facilities. OPLANTS is responsible for requisitioning, procuring, shipping, receiving, and warehousing custodial and industrial supplies, materials, and equipment for building manager and Craft Shops operations. It provides program support and plant services annually for the Festival of American Folklife. It disseminates advice, guidance, plans, methodology, and standards to all major offices and bureaus of the Smithsonian and monitors the quality of accomplishment in the area of its responsibilities.

A new division, Management Services Division, was established in the Office of Plant Services in June 1974. A major program initiated during 1974 was the compilation of utilities bills for past years and year-to-date and the comparison with known degree day (heating and cooling) information from the United States Department of Commerce National Climatic Center. This information has proved invaluable in formulating budget data and will be used in future utilities cost projections.

A work management program was developed to increase productivity of work force by the application of industrial engineering techniques. To bolster this program a highly specialized training course in use of engineering performance standards was attended by the planner-estimators in the Work Coordination Branch.

An ADP system, reflecting the flow of work requests through the Work Coordination Branch, was developed. Printouts showing status of all work requests are provided on a weekly basis.

A work request priority procedure, developed by the Management Services Division, assists in the timely accomplishment of urgent work in support of museums' exhibition programs. The Division established OPLANTS' supply controls to include ordering, inventory, supply levels, reorder points, and proper storage techniques.

Custodial maintenance inspections were conducted by the new Inspections Branch. This inspection program is designed to assure

high standards of cleanliness throughout all Smithsonian museums.

The Crafts Services Division completed the following major projects during the year: constructing a health unit in the Natural History Building and a retention room for the safekeeping of artifacts to be exhibited in the History and Technology Building; assisting in the three-day opening of the Hirshhorn Museum and Sculpture Garden; and providing support to the Festival of American Folklife. The Division also undertook maintenance of the Anacostia Neighborhood Museum.

A preventive maintenance program was implemented in February 1975 in the Fine Arts and Portrait Galleries building, the Hirshhorn Museum and Sculpture Garden, the Renwick Gallery, and the Freer Gallery of Art. The preventive maintenance administration system was implemented by the Preventive Maintenance Branch of this division. The system is geared to maintain physical plant equipment in an economical manner and an operational condition consistent with the age of each machine. It is the intention of OPLANTS to extend this program to other museum buildings.

An IBM System 7, a computerized electrical demand and consumption monitoring and control system, was placed in operation in January 1975. This system, designed to reduce utilities consumption/demand while maintaining vital temperature and humidity levels in museum buildings, was installed and implemented by operating engineers of the Crafts Services Division. Early indications are that substantial savings in energy demand and consumption will exceed expectations.

The mission of the Communications and Transportation Services Division continued to expand as the responsibility for the management of the Smithsonian parking program was delegated to this unit in December 1974. In addition, the Division began operation of an authentic, vintage, double-decker London bus in early May. This vehicle, operated seven days a week, transports visitors to various museums and galleries and has proven to be immensely popular.

Division personnel successfully conducted a program to raise the level of mail consciousness of Smithsonian staff. Particular emphasis was placed on: proper classification and preparation of mail, postal cost reductions, and realistic pickup and delivery schedules. Over 500 persons attended two sessions of a mail-consciousness program, which has resulted in a reduction in postage costs.



Red double-decker London bus (an anonymous gift to the National Portrait Gallery) transports visitors between the Gallery at its off-Mall location and the National Museum of History and Technology on the Mall.

On January 1, 1975, the Horticultural Services Division leased a greenhouse-nursery complex from the United States Soldiers' and Airmen's Home, Washington, D.C. This area consists of: five production houses with a total of 24,000 square feet, a 400-square-foot propagation house, and over an acre of nursery space. This greenhouse-nursery will supply much needed space for production and rotation of plant material for various educational, scientific, and display projects. This complex also provides a location for production of summer annuals and seasonal plantings.

The Horticultural Services Division undertook the landscaping of various museum buildings in 1975. Major projects included the

Hirshhorn Museum and Sculpture Garden, Cooper-Hewitt Museum in New York, and the G Street entrance to the National Collection of Fine Arts. The division also installed 35,000 summer annuals, 8000 fall chrysanthemums, 100,000 tulips, and holiday decorations in most museums.

In an effort to consolidate several off-Mall offices and warehouses, the Smithsonian leased a four-story building at 1111 North Capitol Street. The Warehousing Services Division commenced the move of material in December 1974. By the end of the month the entire contents of Building #3 warehouse in Alexandria were transferred to the Smithsonian Institution Service Center (sisc). Space now is provided for various Smithsonian units and the building is approximately 40 percent occupied at present.

The Metro Group Branch of the Warehousing Services Division, based at the sisc, provides building manager services to off-Mall buildings and to the sisc. Building manager supplies are being warehoused at the sisc. The Receiving and Shipping Branch, which handles office moves and freight transfers for Smithsonian units, now is located at the sisc.

OFFICE OF PRINTING AND PHOTOGRAPHIC SERVICES

The pattern of growth by the Office of Printing and Photographic Services continued during the year with the implementation of expanded capabilities and services both to the Institution and the public.

In the Duplicating Branch, the purchase of additional equipment allowed the Branch to maintain its position of providing responsive reproduction services to the Institution. A new tandem-head press was placed in operation, enabling simultaneous printing of both sides of a page. This not only saves time in printing but also allows for better utilization of paper supplies during this period of rising costs. New collating and binding equipment also was added during the year.

In the area of Photographic Services, the Color Laboratory became fully operational during the year, processing approximately 120,000 35mm color slides and duplicates, as well as high quality 4" x 5" and 8" x 10" color transparencies. The personnel and equipment utilized in this operation have made it one of the best color units in the Washington area.

The Black and White Photographic Laboratory produced more than 200,000 prints during the year, the vast majority of which were to meet requirements of Institution staff. Of this figure, slightly more than 10,000 prints were produced to fill requests from the public.

Recognizing the need to continue providing photographic support to the public, the Customer Services Branch developed a number of black-and-white print and 35mm color slide sets representing the most popular areas for which requests are received. Through mass production, these sets now can be offered to teachers, museum associates, and others at costs below that charged for individual orders. For the first time, the availability of these sets was advertised in the *Smithsonian* magazine with a good response.

Sets produced to date include prints of popular American Indian photographs from the Smithsonian Institution National Anthropological Archives and slide sets on Postal Rarities, the First Ladies Gowns, and the Suiting Everyone exhibit. Coupled with this was the production of slide sleeves with highlights from the National Museum of History and Technology and the National Museum of Natural History. Slides also were produced for the National Collection of Fine Arts and the National Portrait Gallery. All these materials now are available for sale through the Museum Shops.

A slide lecture on Musical Instruments of the Baroque and Early Classical Eras is being prepared under a grant from the Women's Committee of the Smithsonian Associates. Final approval, production, and distribution are anticipated during the coming year.

During 1975, final tests were completed on the ADP program for cataloguing photographic caption data. Input was begun on an initial catalogue of approximately 10,000 photographs covering all aspects of the Institution. This catalogue will be available for worldwide distribution to educators, scientists, publishers, and other interested parties.

OFFICE OF PROTECTION SERVICES

The Office of Protection Services began operating a sentry dog program in the spring. Six dogs, donated to the Smithsonian Institution by private citizens, and six canine handlers, selected from the existing protection force, completed a comprehensive, 14-week

training program. The training was conducted primarily at Andrews Air Force Base, through the cooperation of the United States Air Force. Supervising this training program was a member of our training unit in the Protection Division, who formerly was a K-9 trainer for the Metropolitan D. C. Police Department. Use of the K-9 teams started on April 14, 1975, primarily to patrol the grounds around our Mall facilities, the interior of areas such as the Silver Hill Facility, Lamont Street, the new Service Center on North Capitol Street, and to provide a limited amount of internal patrol in the Natural History Building during nonpublic hours. Dogs are kept on leash by their handlers throughout patrol duty.

A significant reduction was realized in the rate of increase in crimes during 1974. Whereas the rate of increase was 90 percent in 1972 over 1971 and 51 percent in 1973 over 1972, the rate rose by only 4 percent in 1974 over 1973. Much of the credit for reducing the rate of increase belongs to our expanded plainclothes operations in our Mall facilities.

A new health unit, opened in 1974 in the new Hirshhorn Museum and Sculpture Garden, serves employees of our south Mall facilities. The unit also provides first aid treatment for the public. Present plans include another health unit in the new National Air and Space Museum when it opens to the public next year.

A new operational element was established to provide protection and security for the new *NASM*. The first increment of protection officers was placed in the Museum in the spring, with plans for operation to reach full strength as the Museum nears completion and readies for public opening.

OFFICE OF SUPPLY SERVICES

The Office of Supply Services processed approximately 20 percent more procurement and contract actions this year than in fiscal year 1974. This was accomplished with no increase in personnel while the Institution continues to expand its facilities and activities.

The Receiving and Storage Sections were consolidated and moved to larger quarters at the Smithsonian Institution Service Center. The new facility provides for much needed working space to receive, inspect, inventory, and store items until they are delivered. Standard forms and printed paper items are the only items stored

in the stock room in the Natural History Building. All other items are purchased by the organization units through the General Services Administration Self-Service Stores. This has freed supply personnel to form inventory teams and to insure that proper inventories are taken by the organization units, thus accounting for all accountable personal property.

Participation in the Government Property Utilization Program brought to the Smithsonian Institution the Humphrey Diamond, valued at more than \$100,000 and the sound and electronic equipment from EXPO 74, Spokane, Washington, which will be installed in the new National Air and Space Museum with a savings of over \$150,000 to the Smithsonian.

TRAVEL SERVICES OFFICE

The Travel Services Office (tso), responsible for the accomplishment and coordination of the travel plans for the Smithsonian Institution throughout the United States and to all areas of the world, again this year experienced growth in all its major activities such as air and rail reservations and travel itineraries.

In addition to furnishing travel services, advisory services and detailed planning, data were provided for the annual Festival of American Folklife; for national and international conferences; and for meetings and archeological expeditions in Yugoslavia, Israel, Morocco, and Tunisia.

Of particular interest this year, in connection with the Eighth Annual Festival of American Folklife, tso assisted in planning for and providing tickets to foreign participants from Greece, Nigeria, Scandinavia, and Tunisia, including a tour of the United States.

Working closely with the Accounting Division, the Travel Services Office participated in the implementation on October 16, 1974, of the new Automatic Payment Procedure System for the purchase of airline tickets. Also working with the Accounting Division, tso initiated plans for a similar system for the payment of certain railway tickets, and implementation of these procedures will occur early next fiscal year.

Close liaison was maintained with the airlines to accomplish continuing complex travel arrangements performed for the Foreign Currency Program of the Office of International Programs.

INTERNATIONAL EXCHANGE SERVICE

The International Exchange Service is the one program bureau included in the Support Activities group. Since 1851 the Service has provided the means whereby learned societies in the United States can exchange their scholarly publications for those of foreign institutions.

During the year publications were received from approximately 250 organizations representing every state in the Union for transmission to over 100 countries. Publications were forwarded by ocean freight to 38 exchange bureaus in 32 countries. Where there are no exchange bureaus, the publications were mailed.

Approximately 100,000 packages were received from foreign institutions for distribution in the United States.

Despite the rising cost of shipping and supplies, service was maintained at the level of the previous year.

Events of note for the period were the retirement of J. A. Collins as Director after nineteen years with the International Exchange Service and forty-two years with the Smithsonian Institution, and the move of the Service to new quarters.

Financial Services

The Treasurer has overall responsibility for the financial assets of the Smithsonian Institution. Such responsibility includes the budgeting and accounting of federal appropriations, the fiscal administration of grants and contracts, and the monitoring of revenue-producing activities. Further detail on these activities is given in the following five reports by the Office of Programming and Budget, the Accounting Division, the Investment Accounting Division, the Grants and Insurance Administration Division, and the Business Management Office.

Working closely with the Investment Policy Committee of the Board of Regents, the Treasurer oversees the management of the endowment funds of the Institution by three professional advisory firms, and is also responsible for the short-term investment of current funds excess to immediate operating needs. Details on these funds and the other financial resources of the Institution can be found in the Financial Report at the front of this volume.

OFFICE OF PROGRAMMING AND BUDGET

The Office of Programming and Budget participates in program planning for the Institution and, to carry out these plans, formulates, presents, implements, and reviews operating and construction budgets of appropriated and nonappropriated funds. About \$100 million from many different sources were involved this year. Details on these sources and on the application of the funds may be found in the Financial Report. The Office works closely with all operating and managerial levels of the Institution and participates in presenting Federal budgets to the President's Office of Management and Budget and to the Congress.

During the year, detailed operating budgets and staffing plans were developed with some seventy-five organization units ranging from the major program activities, such as museums, research laboratories, and the magazine *Smithsonian* to the supporting service and staff offices. Separate budgets also were prepared on a large number of restricted fund projects primarily of a research and collections management nature. Construction budget matters called for frequent work with the Office of Facilities Planning and Engineering Services and with the National Zoological Park.

Several actions were initiated during the year to aid in the development and execution of the budget processes. Planning statements and detailed information on the amounts and uses of currently available financial resources were requested from all operating units for review prior to their submission of proposals for following year budgets. Using information supplied by the bureaus and offices, current allocations of staff and dollar resources from all sources of funds to Smithsonian functions, such as research, conservation of collections, and exhibitions, were compiled to show areas of strength and weakness. The purpose of this effort was to allow more time for the top managers of the Institution to review program directions, goals, and resource adequacies before decisions needed to be made on future budgets. The third annual meeting to review and agree on Institution goals and priorities was held at the Chesapeake Bay Center in June 1975 to lay the groundwork for fiscal year 1977 and subsequent planning.

Steps were taken to develop a computer-assisted system for the



Auction held at the National Zoo by the Women's Committee, May 22, 1975. Mrs. S. D. Ripley places a bid on the flower prints by Mary Vaux Walcott. Below: View of the supper held in the Monkey House during the auction at the National Zoo held by the Women's Committee, May 22, 1975.



preparation and update of annual organization unit employment plans (showing positions, names of incumbents, salaries, and benefits) which are used as a key ingredient to the development of each operating budget. In addition to reducing the heavy manual workload now required to produce these plans for about 4,000 employees, such an automated system will allow future costs of proposed employment actions and government-wide legislated salary increases to be determined and assessed. The system may also allow the coding of the functional purposes served by staff and, thus, give more accurate base-analysis data for review.

ACCOUNTING DIVISION

The Accounting Division regularly handles and accounts for all funds of the Institution, both federal and nonfederal, including payrolls, payments for materials and services, and receipts from a great variety of sources, and in addition provides over 600 financial reports monthly to Institutional managers at unit and headquarters levels.

Continuing the accounting services program during fiscal 1975, the accounting staff developed and implemented efficient programs on the key-to-disk data entry system installed in May 1974. These programs permit data entry from the business document and have reduced the clerical copying and transfer of data from one document to another. As a byproduct, disbursing checks are produced for private funds and a magnetic tape is produced on federal transactions for automatic payment by the United States Treasury. Additionally, the Accounting Division completed the implementation of an optical mark read personnel time-reporting procedure, and reorganized the voucher-examining routine to speed up payments.

INVESTMENT ACCOUNTING DIVISION

The Investment Accounting Division is responsible for cash management and cash forecasting projections for the purpose of insuring maximum investment of temporary surpluses and other financial management purposes.

The Division supervises the formulation of data and maintenance of the ADP mechanized system utilized in the preparation of investment ledgers, performance evaluation indices on the three invest-

ment managers, commission reports, audit work sheets, and accruals.

In addition, this Division performs all tasks required in applying the total return concept of income to the various endowment income funds, including the initial annual projections to determine normalized five-year average market valuation and the effect of total return on historic dollar value of the individual funds.

GRANTS AND INSURANCE ADMINISTRATION DIVISION

The Grants and Insurance Administration Division, responsible for administration of gifts, grants, and contracts received by the Institution, administers the Institution's risk management and insurance program. The Division provides administrative, management, and financial services to Smithsonian researchers and business representatives of granting agencies. It establishes and monitors systems and procedures to assure that funds are expended in accordance with appropriate regulations and contract terms. During the past year the Division continued its financial administration of these funds continually exploring various approaches to providing management information in meaningful and expeditious forms to meet better the ever-expanding administrative needs of the bureaus.

The risk management program of the Institution was expanded through our participation in seminars and workshops. The pilot seminar and workshop—attended by the staff of various museums, including the Smithsonian—was designed to expand the knowledge of museum insurance problems and innovations through the exchange of information and proved to be quite successful. Future seminars are planned to encourage further participation in solving the complexities of insurance and risk management problems in museums today.

As in 1974, a considerable savings was realized while arranging a wide variety of coverages ranging from giraffe mortality insurance to short-term health insurance for the Festival of American Folklife participants.

BUSINESS MANAGEMENT OFFICE

The Business Management Office has overall responsibility for the Museum Shops, the Product Development Program, and the Bel-

mont Conference Center, which are described below. In addition, it advises other Smithsonian bureaus on the negotiation and monitoring of revenue-producing concessions and contracts. During the past year Business Management assisted in the negotiation of contracts for the construction project in the West Court of the National Museum of Natural History, for the parking concessionaire in the new National Air and Space Museum, and for the expansion of the cafeteria in the National Museum of History and Technology. It also assisted in implementing a number of improvements in the operation of the Commons dining room.

Museum Shops

Fiscal year 1975 saw further progress in the program of Museum Shop improvements which began several years ago. The sales area in the National Museum of History and Technology was redesigned completely by a leading architectural firm, and opened in March 1975. The new design has resulted in a greater ability to serve the large number of visitors to this important museum, as well as in an architectural ambience particularly appropriate to the building.

The opening of a new Museum Shop in the Hirshhorn Museum and Sculpture Garden in October 1974 brought to seven the number of Smithsonian buildings with Museum Shop operations.

Financial results for the year were very satisfactory, making it possible for the Museum Shops for the first time to share a portion of their revenues with the museums for additions to the collections or for other worthwhile projects.

Product Development

The Product Development Program originated in 1972 as a means to make it possible for men, women, and children who cannot visit Washington to learn about and enjoy the historical collections of the Smithsonian, as well as to make it possible for the more than 20 million tourists who do visit the Smithsonian annually to take home with them various interpretations and copies of items in the Smithsonian to share with their neighbors and friends.

As part of this program, the Smithsonian has entered into agreements with several leading United States manufacturers under which they manufacture and sell, in close coordination with the

Smithsonian, various lines of museum-related products. In October 1974, under one such agreement, the Fieldcrest Company introduced to the public "American Treasures," a collection of bedspreads, quilts, comforters, blankets, sheets, and towels based on designs found in the Smithsonian. Public reception has been especially favorable. Fieldcrest's second collection, "Nation of Nations," featuring Smithsonian designs of foreign origin, was introduced to the trade in May 1975 and was well received.

Under another agreement, the Stieff Company introduced in fiscal year 1975 a group of silver and pewter products. Among these are such items as a reproduction of a punch cup which was part of a set presented to the commander of Fort McHenry for its successful defense against the British in 1812, and a reproduction of George Washington's wine coaster.

In June 1975, F. Schumacher & Company introduced to the trade a line of decorative fabrics and wall coverings based on Smithsonian designs. Fiscal year 1975 also saw the trade introduction of three new diorama kits from Tonka, in addition to the four which were brought out earlier.

A new agreement was reached during the year with Universe Books, under which Universe will develop several Smithsonian calendars. Currently in production for 1976 are a desk engagement calendar and three wall calendars based on the Hirshhorn Museum and Sculpture Garden, the National Collection of Fine Arts, and the National Museum of Natural History.

Belmont Conference Center

The Belmont Conference Center, located between the District of Columbia and Baltimore near Interstate 95, provides an attractive, secluded, gracious, and exclusive retreat unusual in the Eastern Corridor. Its easy access to the Baltimore-Washington airports, as well as to automotive arteries, impresses upon its guests the enjoyable paradox of a rural setting with the conveniences of urban proximity but without its complexities. One of the major advantages of Belmont is its use by only one group at any one time; schedules are so arranged as to avoid the overlap and attendant discomforts often encountered in other conference centers and hotels. Since its opening in 1967, conference operations have been directed toward the needs of small groups which require a

location unencumbered by the normal intrusions associated with offices. The 240-year-old manor house, with 365 surrounding acres of lawns, forests, and fields, provides a working retreat for the productive groups which keep returning to the Center.

Belmont can accommodate twenty-four in-house residents, with facilities for ten to twelve additional guests, speakers, or observers for meals and meeting sessions. This limiting size factor ensures that each conference has the undivided and individual attention of the entire staff, as well as the opportunity for unusually close interaction within the meeting group itself. Of the eighty or so meetings which Belmont hosts in a year, approximately 60 percent are from federally-funded agencies; the balance include those from foundations and other philanthropic organizations; professional, religious, and social groups; corporations and private industry; and universities and colleges.

Office of Audits

During fiscal year 1975, the Office of Audits issued audit reports on the Special Events Branch, Certain Foreign Gifts Acquired by the Smithsonian, the Smithsonian Exhibits Program, the Office of Museum Programs, the Protection Division, and the Accounting Division Travel Unit. Audit recommendations made in these reports have resulted in dollar savings and improved management procedures and controls. In addition, various pre-award and post-audits of contracts and grants were completed.

Smithsonian Women's Council

Activities of the Smithsonian Women's Council began successfully this year with the appointment of a coordinator to develop plans for a child-care center for Smithsonian employees. With the full and continuing support of the Secretary and his Executive Committee, studies now are underway to bring the employee child-care project to favorable realization.

The Council coordinated and participated actively with the Office of Personnel Administration and the Office of Equal Opportunity in a wide variety of special programs, including observance of Women's Week in August. The keynote speaker was Wilma Scott Heide, noted feminist and former Chairperson of the National Organization for Women. Additional features were seminars, lectures, films, and an exhibition on women's achievements in the arts and sciences in the Pendulum area of the History and Technology Building. During the week an in-depth workshop on career planning was inaugurated for Smithsonian employees. The continuation of these workshops as a regular part of the Smithsonian personnel program also realizes a goal of the Council to provide employees with in-house career counseling.

This year the Women's Council began a permanent column in the *Torch*—an important means of communication with Smithsonian employees. The column featured articles about Council activities and other matters, such as the Upward Mobility Program and career development and training programs.

On March 4, 5, and 6, members of the Women's Council attended an orientation training program conducted by LaVerne Love, Smithsonian's Women's Program Coordinator. This program provided an opportunity for the Council members to become acquainted with women's programs in government agencies, as well as those in the Smithsonian.

Films on breast and uterine cancer, sponsored by the Council in March, were well attended. A physician from the American Cancer Society was present after the film to answer questions and discuss the technique of breast self-examination.

A Thursday Seminar series of outstanding speakers was begun by the Council in May. This series, designed to appeal to all Smithsonian employees, has featured Euphesenia Foster, Education and Special Projects Officer, Department of Justice, Bureau of Prisons, who spoke about her work on sensitizing the public to the needs of the woman offender; Dr. Estelle Ramey, Professor of Physiology and Biophysics, Georgetown University Medical School, whose subject was "Sex Hormones and the GS Rating"; and Mr. William Blakey, Director of Congressional Liaison for the United States Commission on Civil Rights. The Thursday Seminar series has been received enthusiastically by Smithsonian employees.



Woodrow Wilson International Center for Scholars Fellow Elliot Richardson addresses conference on the problems of New England, held at the Center in October 1974.

WOODROW WILSON
INTERNATIONAL CENTER
FOR SCHOLARS

JAMES H. BILLINGTON, DIRECTOR

LATE IN 1968, the Congress determined that the official national memorial to the twenty-eighth president of the United States should be a "living memorial." This congressional decision to build a living memorial for a great scholar-president has enabled a new international center for advanced scholarship to emerge in Washington. It is well on the way to becoming a place which makes a difference; a center in which humanistic, Wilsonian connections are made between intellect and moral purpose, the world of ideas and the world of affairs.

People, ideas, and communication are the essentials of scholarship. The activity of this Center is a creative mix of all three: people who can think, ideas that matter, and communication that gets through.

People

Finding gifted people to investigate important ideas is the main business of the Center. The principal task is the difficult but stimulating search for men and women with the right combination of discipline, dedication, and focus.

Happily, there has been gratifying variety among fellows in the last year. Though their number is small (thirty-five fellows at a

time is customary), different backgrounds and cultures are always present. The past year we have welcomed a marine engineer from the navy with the world's record for deep-sea diving; the former attorney general of the United States; former head of the Chilean Christian Democratic Party; former presidents of Johns Hopkins University and of the American Political Science Association; active leaders of major international studies programs in New Delhi, Tokyo, and Oxford; distinguished scholars of international law from Australia, France, Israel, and Poland; and thoughtful journalists writing major books on European-American relations, regionalism in America, and the reporting of news in Washington, D. C.

Program

From the beginning, the Center has sought to reserve some of its fellowships for certain areas of special emphasis. In May 1974, the Board of Trustees formally adopted the recommendations of a committee chaired by Paul McCracken that the Center be organized into three broadly defined scholarly divisions: *Historical and Cultural Studies*; *Social and Political Studies*; and *Resources, Environment, and Interdependence*. This arrangement creates no permanent positions or restrictive barriers within our interdisciplinary body, but it will enable us to plan for a balanced company of fellows chosen by panels with relevant disciplinary qualifications.

Historical and Cultural Studies represent the new humanistic thrust of the Center. There are three special areas of emphasis within this division. First is a cluster of scholars working on the period of the American Revolution and the early constitution, which has given the Center a bicentennial focus well before the national celebrations are scheduled to begin. Three fellows working at the Center on projects in the period of the American Revolution devised and put together on behalf of the Center scholarly materials and an intellectual framework for a special session of the House of Representatives on September 25, 1974, commemorating the 200th anniversary of the First Continental Congress. Jack Greene compiled the special publication of documents and Martin Diamond provided the commentary on nationwide public television

for what was, in effect, the opening event in the celebration of the Nation's 200th birthday.

In the memorial to an internationalist president it is fitting to focus special attention on key areas of concern abroad. Thus, the Board of Trustees established in December 1974, under the leadership of Center fellow George Kennan, a new Institute for Advanced Russian Studies. Mr. Kennan's unique stature as the senior scholar-statesman of Soviet-American relations makes him a uniquely appropriate chairman of the advisory council for this new effort within the Center. Assembling a small but superior group of fellows in this area will permit greater use of the unmatched resources in Washington, and will hopefully serve as a fresh catalyst for the continuing national effort to understand better the other great superpower.

A third special area within the Historical and Cultural Studies division will consider the role of the visual media (film and television) in contemporary culture. On the basis of extensive staff study and the counsel of outside advisors, the Center decided late in 1974 to encourage applications in this area through the regular fellowship competition.

Social and Political Studies is the division dealing with areas that specially interested Woodrow Wilson as both a scholar and statesman. In response to a Board decision to devote special attention to the institutions of American government as they enter their third century, the Center launched a special program in State and Local Government in 1973. Careful staff study and an outside advisory group helped devise a program to encourage scholarly studies by practitioners. By mid-1974 a company of five were pursuing individual studies in this area at the Center. Elliot Richardson was the first fellow in this division and became chairman of the outside advisory group. Substantial funding for the program was provided by the Ford Foundation.

Other studies in this division have dealt with government institutions at the federal level—ranging from philosophical analysis of proportional representation by a professor from Cologne to an interview-based study of management techniques in the United States executive branch by a professor from Glasgow.

Resources, Environment, and Interdependence, the third division of the Center, includes subjects specially emphasized by the Center

in its formative early years: uses of the oceans, problems of the environment, and the prospects for sustainable economic growth. Significant work has been done at the Center in these areas—particularly in preparing for international conferences, producing informed awareness of key problems, and sponsoring public presentations and meetings at the Center (as well as two conferences each at Wingspread, Wisconsin, and Ditchley, England). After reviewing work at the Center in these areas, the Board reaffirmed, in June 1974, its continued commitment to further study in the fields covered by this division.

Communication

The determination to communicate is second only in the life of this Center to the prior, basic need to gather people with something worth saying. We were gratified that the Congress authorized a modest increase in the Center's appropriation for fiscal year 1975 to create a new program of "public service"—the main purpose of which is to share more broadly the fruits of the fellows' scholarship.

Every fellow at the Center has a major individual project. Publication of the results of these projects is one of the Center's major goals.

There are also other types of publications—some of them more widely read than traditional scholarly monographs. Scores of major articles in magazines and dozens of smaller pieces have been published.

Our desire systematically to disseminate thoughtful, short pieces by Center fellows led the Board in December 1974 to authorize the founding of a quarterly journal by the Center. Peter Braestrup, a distinguished journalist and fellow of the Center, will edit this new publishing venture, which should begin to appear in 1975.

Another area of planned Center publication lies in the field of scholarly inventories. The Center followed bibliographical work in the environmental area with a worldwide survey of research in progress on the subject of sustainable growth. The first version of this inventory was rapidly exhausted when it appeared this past year, and a final revised version will be completed early in 1975.

The Center also plans to begin preparing in 1975 the first of perhaps several readable guides to Washington resources as a service to the entire scholarly community.

A basic rule for all meetings at the Center is that they must assume the form of dialogue. Unlike Universities, where the basic form of intellectual exchange is still the lecture-monologue, the Center insists that all public discourse involve more than one speaker in some form of structured exchange. There are basically three types of dialogue at the Center:

Pre-luncheon discussions are held every Tuesday and Friday providing an opportunity for informal, internal discussion among the fellows and with a variety of distinguished guests. Informal dialogue has been notably enriched at the Center during this past year by the establishment of a new buffet-dining room for Center fellows in the fourth floor seminar room of the "Castle" building.

Late afternoon colloquia on work-in-progress are generally given by all fellows at some time in the course of their stay at the Center. A fellow also serves at some time as the appointed critic of another's presentation, focussing discussion on key ideas rather than minor debating points. Attendance at these sessions is purely optional, but generally high.

Evening dialogues provide an opportunity, thanks to a generous grant from the Xerox Corporation, to assemble carefully invited groups of thirty to thirty-five persons for the sustained discussion of questions of fundamental importance. These evenings begin with an uninterrupted dialogue of more than an hour among two or three specially qualified speakers. After dinner, members of the public and others join the discussion at a deeper level than is possible under the pressure of day-to-day work. The evening dialogues have been taped by Radio Smithsonian and broadcast over public radio.

JOHN F. KENNEDY CENTER
FOR THE PERFORMING ARTS

ROGER L. STEVENS, CHAIRMAN

SINCE SEPTEMBER 6, 1971, when the Kennedy Center opened with the first preview of Leonard Bernstein's *Mass*, more than 4000 performances, nearly 6,000,000 opera-, ballet-, concert-, and theatergoers, an estimated 12,000,000 sightseers, and a host of national programs have affirmed the viability of the dual concept of national cultural center and living memorial.

The Center's first four seasons have not been without moments of trial, as might be expected in such a massive and unprecedented undertaking, but public response has proved extraordinarily favorable and support, almost overwhelming. It is particularly satisfying to note that the Nation's Capital has gained, at long last, a proper national and international reputation for the quality of its performing arts facilities and activities.

The Center's 1974-1975 season proved the most successful thus far and set the stage for a series of exciting projects and programs to come. A total of 1041 performances were presented in the three major halls from July 1, 1974, through June 30, 1975. These included 619 performances of drama and musical comedy, 167 symphony concerts, 30 performances of 14 operas, 98 performances of dance, 25 recitals, 29 choral concerts, 44 concerts of popular music, 12 chamber concerts, 8 performances of mime, 4 variety, and 5 comedy programs.

The theater season presented a spectacular array of performers and productions. During the summer months, three musical revivals—*I Do! I Do!*, starring Carol Burnett and Rock Hudson, *Seesaw*,



Mstislav Rostropovich acknowledges a thunderous ovation.
Photo: Richard Braaten

with John Gavin and Lucie Arnaz, and *Gypsy*, with Angela Lansbury in her Tony Award-winning role—played to capacity audiences in the Opera House, while in the Eisenhower Theater, Sir Ralph Richardson starred in William Douglas Home's delightful comedy, *Lloyd George Knew My Father*, and Eva Marie Saint gave a stunning performance in her third Center production, O'Neill's *Desire Under the Elms*.

In September, the Center welcomed Geraldine Page, Sandy Dennis, and Richard Kiley in Alan Ayckbourn's hilarious comedy, *Absurd Person Singular*, which has subsequently enjoyed tremendous success on Broadway. The enormously talented John Wood followed in the title role of the Royal Shakespeare Company production of *Sherlock Holmes*, and the incomparable Donald Sinden delighted audiences in another Royal Shakespeare production, *London Assurance*.

Bernadette Peters and Robert Preston starred in a new musical, *Mack and Mabel*, based upon the lives of filmmaker Mack Sennett and his leading lady, Mabel Normand, and returning as stars of Terence Rattigan's moving drama, *In Praise of Love*, were Rex Harrison and Julie Harris, who had each appeared previously in the Opera House.

Deborah Kerr spent her second consecutive Christmas season at the Center, starring with Barry Nelson in Edward Albee's new play, *Seascape*, and Yul Brynner and Joan Diener played the Opera House for an unprecedented six weeks in the Center-produced musical, *Odyssey*, prior to an eight-month national tour.

The late winter months featured the New Phoenix Repertory Company's production of Carson McCuller's *The Member of the Wedding* and *Owen's Song*, a spirited production presented by Washington's Workshops for Careers in the Arts. Elizabeth Ashley displayed her considerable talent as Maggie in a critically acclaimed, post-Broadway engagement of *Cat on a Hot Tin Roof*, and Ingrid Bergman made a welcome return to the Opera House in Somerset Maugham's stylish comedy, *The Constant Wife*.

Diana Rigg and Alec McCowen starred in a sparkling British National Theatre production of Moliere's *The Misanthrope*, and James Earl Jones and Kevin Conway subsequently led a fine cast in John Steinbeck's shattering drama, *Of Mice and Men*.

During April, the seventh annual American College Theatre Festival presented ten outstanding college and university productions, which were selected during a series of regional festivals in which over 330 schools participated. Included in this year's activities were the presentation of the winning play in the William Morris Agency's New Playwriting Award Competition, *Medea: A Noh Cycle Based on the Greek Myth*, the annual Irene Ryan Scholarship program, in which thirteen student actors competed for two \$2,000 scholarships provided from a fund established by the late Irene Ryan, and a series of symposia in playwriting and drama criticism for students, made possible by a grant from the National Endowment for the Arts. Sponsored by AMOCO, the Festival is presented each year by the Kennedy Center, the Alliance for Arts Education, and the Smithsonian Institution and is produced by the American Theatre Association.

Douglas Fairbanks, Jr., who scored such a success in the Center's 1972 production of *The Pleasure of His Company*, returned to close the 1975 season with a record-breaking run of Noel Coward's marvelous comedy, *Present Laughter*.

The musical season was no less spectacular with concerts by twenty-one major orchestras and appearances by such renowned artists as Rudolf Serkin, Van Cliburn, Elizabeth Schwarzkopf, Pierre Cochereau, Marilyn Horne, and Andres Segovia.

A unique five-day festival offered audiences an extraordinary opportunity to observe and enjoy the multifaceted talents of Mstislav Rostropovich. During the festival, Rostropovich appeared in solo cello recital, in his American debut as symphony conductor, as piano accompanist to his wife, Galina Vishnevskaya, one of the world's foremost sopranos, and as chamber-orchestra conductor and cello soloist. To the delight of all, it was announced shortly after the close of the festival that Rostropovich would assume artistic leadership of the Center's resident National Symphony Orchestra in 1977.

A Schoenberg-Ives Festival, sponsored by the Alliance for Arts Education, paid tribute to the two musical giants of the twentieth century on the occasion of the one-hundredth anniversary of their births and featured a series of eight free performances by university and conservatory orchestras. Each performance was preceded

by an open symposium, during which the performers and conductors discussed their programs and exchanged ideas with members of the audience.

The opera season opened with four Rome Piccolo Opera productions, *Il Maestro di Cappella*, *La Cambiale di matrimonio*, *Il Filosofo di Campagna*, and *Il Mercato di Malmantile*, presented as a part of the Venetian Festival. This festival, made possible through the generosity of the Morris and Gwendolyn Cafritz Foundation and presented in cooperation with the Italian government, featured many of the most glorious musical works of the Renaissance and Baroque periods.

As its contribution to the Venetian Festival, the Opera Society of Washington presented a revival of its much-acclaimed production of Monteverdi's *L'Incoronazione di Poppea*. The Society subsequently continued its season with productions of *Die Walküre* and *Salome*.

The New York City Opera paid its annual visit to the Center in late spring and presented a total of seven productions, including Bellini's *I Puritani*, with Beverly Sills, *Manon Lescaut*, *Madama Butterfly*, *Die Fledermaus*, *La Traviata*, *Die Tote Stadt*, and *The Consul*.

A brilliant dance season featured six of the world's foremost companies: the American Ballet Theatre, with such artists as Mikhail Baryshnikov, Cynthia Gregory, and Natalia Makarova; the New York City Ballet; the Alvin Ailey City Center Dance Theatre; the Joffrey Ballet; the Stuttgart Ballet; and the spectacular Bolshoi Ballet.

One of the most heartening developments over the past four years has been the phenomenal growth of the Washington dance audience. Prior to the Center's completion, major dance companies were unable to perform in Washington for lack of an adequate facility. Now, such companies are virtually assured capacity audiences and an exceptionally enthusiastic response.

Obviously, such programming as was presented during the 1974–1975 season is not without considerable expense. The Center is solely dependent upon income from theater operations, concession revenue, and private contributions for its performing arts activities, and support from the private sector is critically important to the carrying out of an extensive public service program.



American Ballet Theatre principal dancers, Mikhail Baryshnikov and Gelsey Kirkland.
Photo: Richard Braaten

During the past year, the Center has been the grateful recipient of a number of major programming grants. Mobil Oil Corporation generously sponsored the annual holiday festival, "The Twelve Days of Christmas," which featured over forty free performances staged throughout each day of the twelve-day period. One event, the enormously popular "Messiah Sing-In," drew a capacity Concert Hall audience and was broadcast to hundreds of additional listeners in the Grand Foyer.

The Center has also continued to host Mobil's series of weekly National Town Meetings, which afford citizens and leaders a fascinating opportunity to debate and discuss topics of major national interest.

McDonald's Restaurants, sponsor of the Center's two previous Christmas festivals, provided funding for a week-long "Spring Festival of American Music," as the company's gift to the tens of thousands of visitors to Washington during Easter week. The Spring Festival, with a total of thirty-five free performances, drew over 35,000 people and included music from all periods of American history. Highlighting the festival, which officially launched the Center's Bicentennial celebration, was a performance of the works of Aaron Copeland, conducted by the composer himself.

In an extraordinary gesture, Xerox Corporation announced plans to underwrite the Center's entire 1975-1976 theater season. Entitled "American Bicentennial Theatre," the season will include ten exciting productions of American plays and will draw upon the talents of some of the most outstanding performers and directors in the American theater. With the help of Xerox, the Center will be, for the first time, in a position to produce an entire theater season itself.

IBM has very generously provided funding for another major Bicentennial project, an exhibition entitled "America On Stage: 200 Years of the Performing Arts." The exhibition, scheduled to open in December 1975, will be housed on the Center's roof-terrace level and will reflect the history and development of the American performing arts experience.

Exxon has provided a grant for a "bicentennial Parade of American Music," conceived and produced by the National Music Council and featuring free concerts by performing groups from each of the



Members of "The Fast-Flying Vestibule" perform during the Spring Festival of American Music. Photo: Richard Braaten

fifty states and the District of Columbia. In addition, the corporation has agreed to underwrite three major concerts and two operettas during the Bicentennial season.

The Prudential Insurance Company of America will sponsor a cavalcade of American song, dance, and legend, entitled "Sing America Sing." The production, written and directed by Oscar Brand, will be presented in the Concert Hall during a two-week period in September.

The Morris and Gwendolyn Cafritz Foundation not only sponsored the Venetian Festival but generously provided a grant which will enable the Center to present the legendary Bolshoi Opera to Washington audiences during July 1975. The Opera, with a company of more than 450, will appear only in Washington and New York.

Not all gifts to the Center during the past year have been program-related. In November, the government of Colombia formally presented a striking metal sculpture, by Colombian sculptor Eduardo Ramirez, for the south lawn. The Center has also received two stunning, hand-crafted oil lamps from the government of Sri Lanka and six magnificent wool carpets from the government of Morocco. The China Institute in America, Inc., has generously undertaken the decoration of a Chinese Room on the second tier of the Concert Hall.

By the very nature of its establishing legislation, the Kennedy Center is far more than a series of theaters and a tourist attraction, and its educational responsibilities are keenly felt.

As a part of its educational endeavor, the Center distributed over 140,000 tickets during 1974-1975, through its Specially Priced Ticket Program. This program, designed to make the Center's performances accessible to all, regardless of economic circumstances, enables students, the handicapped, retired persons over the age of sixty-five, military personnel in the lower grades, and low-income groups to purchase tickets at half price.

A series of free, daytime programs have been developed in an effort to provide sightseers with a performing-arts experience during their visit to the Center. In addition to festival programming, there are weekly demonstrations of the workings of the Concert Hall's Filene Memorial Organ, with participation by area organists.

These demonstrations are co-sponsored by the Friends of the Kennedy Center and the National Park Service.

During 1974–1975, weekly performing-arts seminars were sponsored by the Friends of the Kennedy Center, the National Symphony Orchestra, and the Park Service. The seminars were designed to provide an additional forum for the brilliant performers who appear at the Center and an opportunity for local audiences and the thousands of visitors to gain a deeper understanding and appreciation of the arts through an immediate exchange with these artists.

The Center also welcomed over 50,000 Washington-area school-children to a series of free concerts, sponsored by the National Symphony Orchestra and the Washington Performing Arts Society.

The national Alliance for Arts Education, a joint project of the Department of Health, Education, and Welfare and the Kennedy Center, was established in 1973 to help the Center fulfill its Congressional mandate “to develop programs in the arts for children and youth which are designed specifically for their participation, education and recreation.”

The AAE is concerned with and dedicated to furthering the arts as a major ingredient in the education of every child and to fostering cooperation between institutions and programs which are similarly involved. To achieve its purpose, the AAE has established committees in the District of Columbia, the Bureau of Indian Affairs, and forty-eight states. These committees are responsible for developing and assisting in the implementation of comprehensive state arts programs.

On the national level, the Center provides opportunities for demonstration programs and representative performance activities through a National AAE Showcase series. During the summer of 1974, eighteen groups representing theater, music, dance, film, and aesthetic and perceptual education, visual arts, and arts programs for the mentally retarded were included in Showcase activities, which ranged from elementary through college levels. Throughout the year, the AAE also sponsored a number of free performances in close cooperation with the Friends of the Kennedy Center and the National Park Service.

In addition to involvement in special programs, the Friends of the Kennedy Center provide vital support to a myriad of Center

projects and activities. The Friends, established as the Center's auxiliary organization in 1966, now number over 10,000. Volunteer members have given literally thousands of hours of their time conducting tours, providing information, managing souvenir stands, and overseeing the Specially Priced Ticket Program.

During 1974-1975, the Friends and the National Park Service provided information, assistance, and hospitality to over 2.5 million visitors. The National Park Service, which assumed responsibility for maintaining the Center as a national memorial in 1972, has enhanced the operation enormously by carrying out vital maintenance, security, information, and interpretation functions. The Park Service is reimbursed by the Center for the performing-arts portion of maintenance costs.

Although organizationally a bureau of the Smithsonian Institution, the Center is administered separately by a forty-five-member Board of Trustees, composed of thirty members appointed by the President to ten-year overlapping terms and fifteen members ex-officio from pertinent government agencies, the Senate, and the House of Representatives.

During the past year, President Ford reappointed Frank N. Ikard, Mrs. Stephen Smith, and Ms. Donna J. Stone and also named as members The Honorable Peter H. B. Frelinghuysen, The Honorable J. William Fulbright, R. Phillip Hanes, Jr., and The Honorable Melvin Laird. Both Mr. Frelinghuysen and Mr. Fulbright have previously served as ex-officio members.

The President of the Senate has appointed The Honorable Edward M. Kennedy to represent the Senate, and The Honorable Marvin L. Esch has been named by the Speaker of the House to represent the House of Representatives.

Mrs. Gerald R. Ford has graciously consented to serve as Honorary Chairman of the Center and joins Mrs. Dwight D. Eisenhower, Mrs. Aristotle Onassis, Mrs. Lyndon B. Johnson, and Mrs. Richard Nixon in that capacity.

By unanimous vote, the Board of Trustees elected Mrs. George A. Garrett the Center's first and only Honorary Trustee, in recognition of her years of dedicated service to the institution. Mrs. Garrett served as a member of the Board from 1958 until 1975.

Members of the Board of Trustees at the close of fiscal year 1975 are as follows:

Roger L. Stevens, *Chairman*
Richard Adler
Ralph E. Becker
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The Honorable Marvin L. Esch
Gary E. Everhardt
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The Repentant Magdalen by Georges de La Tour (detail).
Ailsa Mellon Bruce Fund 1974.

NATIONAL GALLERY OF ART

J. CARTER BROWN, DIRECTOR

THE NATIONAL GALLERY OF ART, although formally established as a bureau of the Smithsonian Institution, is an autonomous and separately administered organization. It is governed by its own Board of Trustees, the statutory members of which are the Chief Justice of the United States, Chairman; the Secretary of State; the Secretary of the Treasury; and the Secretary of the Smithsonian Institution, all *ex officio*; and five general trustees. Paul Mellon continued as president of the Gallery and John Hay Whitney as vice president. The other general trustees continuing to serve were Carlisle H. Humelsine, Dr. Franklin D. Murphy, and Stoddard M. Stevens.

During the fiscal year 1975 the Gallery had over 1,827,300 visitors.

A number of important works of art were acquired. By far the most significant—in fact, the most important single acquisition since Leonardo's *Ginevra de'Benci* in 1967—was Georges de La Tour's *The Repentant Magdalen* (1640), purchased after lengthy negotiations with the owner and the French government, which in the end graciously permitted its export.

Seven works of sculpture were added to the collection including a della Porta bronze of Pope Paul III and Saint-Gauden's bronze *Diana of the Tower*.

Among the 987 works of graphic art acquired were thirty-seven drawings, among them Guercino's powerful *Fisherman* and a Jordaens watercolor. The 950 prints accessioned included Vuillard's *Tuileries Garden*, Nolde's *Candle-Dancer* and several important works by Piranesi.

Eleven exhibitions were shown at the Gallery during the year, including six important loan shows. By far the most significant in terms of popular attraction and general historical interest was the "Exhibition of Archaeological Finds of The People's Republic of China" which, in fifteen midwinter weeks, drew 685,000 viewers. The exhibitions are listed at the close of this section.

From its collections, the Gallery made loans to thirty-eight exhibitions at fifty-three institutions including eight abroad. Included were forty-eight paintings, two sculptures, and 293 graphics.

A newly created Extension Program Development Department headed by Joseph J. Reis, former Director of Education at the Milwaukee Art Center, began its task of forward planning, production and revision of the audio-visual programs circulated nationally by the Gallery. The total number of bookings of Extension Service materials, film strips, slide lectures and films was 27,088. The total estimated audience in all fifty states and abroad was nearly three million. Another educational program, *Art and Man*, published in cooperation with Scholastic Magazines, Inc., reached over four thousand classrooms in every state.

Total attendance at talks given by the Gallery's Education Department and at the programs presented in the auditorium was 163,728. These included the regularly scheduled auditorium lectures and films, the Introduction to the Collection, the Tour of the Week, and Painting of the Week, as well as special introductory presentations keyed to three of the exhibitions. There were thirty-three guest lecturers including the twenty-third annual A. W. Mellon Lecturer in the Fine Arts, H. C. Robbins Landon, who gave a series of seven lectures with slides and musical excerpts entitled "Music in Europe in 1776." Other distinguished scholars from abroad who lectured included Carl Nordenfalk, Sir John Pope-Hennessy, and Sir Ellis Waterhouse, the Kress Professor in Residence.

The Conservation staff had a busy year restoring important works of art, surveying paintings in the Gallery and on protracted loans elsewhere, fitting desiccants to many of the cases holding the treasures in the Chinese archaeological exhibition, as well as detailed planning for the new and substantially enlarged conservation laboratory on which construction is expected to start in the fall of 1976 in the Gallery's main building.

The Research Project at Carnegie-Mellon University continues to provide technical advice on polymers, pigments and illumination to museums both in the United States and abroad, in the past year assisting the Library of Congress, the Corning Museum of Glass, Museum of Modern Art, Art Institute of Chicago, Walters Art Gallery, Carnegie Museum, and the Society for the Preservation of New England Antiquities.

In the Library the year was marked by the acquisition from Milan of the Reti Library, one of the world's finest collections of material on Leonardo. More than four thousand other books and pamphlets were received in addition to 83,260 photographs for the Photographic Archives.

The Publications Room had a banner year selling over eighty thousand of the illustrated catalogues of the Chinese exhibition and handling 498,325 over-the-counter orders and 6891 mail orders.

The Music Program continued to draw enthusiastic audiences and critical acclaim. Forty Sunday evening concerts were presented, including five world premieres and seventeen first Washington performances of works by a total of nineteen composers. String ensembles from the National Gallery Orchestra played on four other public occasions. Radio Station WGMS broadcast each concert, all but two live.

During the year the main outlines of the new East Building took form above Pennsylvania Avenue and the Mall. The eastern tower rose to roof level, and the Study Center construction reached the seventh of its eight levels above grade. The huge trusses that connect the towers along the Pennsylvania Avenue and Fourth Street façades were put into place in the autumn. The exterior marble covered much of the building to the third level and part of the south wall to the fifth.

The concourse-cafeteria area progressed rapidly once the trace of Fourth Street was restored to its original alignment. Excavation and foundation mat were completed, and, by June, this connecting link between the present building and the new East Building was almost entirely covered over at plaza level by form-work or completed pours of concrete.

EXHIBITIONS AT THE NATIONAL GALLERY OF ART,
FISCAL YEAR 1975

American Textiles: Watercolors from the Index of American Design
Continued from the previous fiscal year through July 15, 1974.

Recent Acquisitions and Promised Gifts: Sculpture, Drawings, Prints
Continued from the previous fiscal year through August 4, 1974.

African Art and Motion

Continued from the previous fiscal year through September 22, 1974.

M. C. Escher Prints

July 26 through December 30, 1974.

Venetian Drawings from American Collections

September 29 through November 24, 1974.

The Exhibition of Archaeological Finds of The People's Republic of
China

December 13, 1974, through March 30, 1975.

Rubens, Van Dyck & Jordaens: Prints & Drawings

January 8 through February 19, 1975.

"The Sick Girl," by Edvard Munch

January 23 through March 6, 1975.

Medieval and Renaissance Miniatures from the National Gallery of Art

January 26 through March 23, 1975.

Lithographs Printed at the Tamarind Workshop, Inc., Los Angeles

February 21 through the end of the fiscal year.

Jacques Callot: Prints and Related Drawings

June 29, 1975, through the end of the fiscal year.

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APPENDIX 1. *Members of the Smithsonian Council, Boards,
and Commissions, June 30, 1975*

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National Gallery of Art

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* This body was created in October 1971 to assist the Institution in the pursuit of certain of its aims for the decade of the 1970s, particularly in the development of its relations with industry.

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APPENDIX 2. *Smithsonian Special Foreign Currency Program
Research Supported in Fiscal Year 1975*

ARCHEOLOGY AND RELATED DISCIPLINES

American Institute of Indian Studies, Philadelphia, Pennsylvania. Continued support for administration; research fellowships; Benares Center for Art and Archeology; documentation of selected ritual art forms as communication systems of traditional culture; recording and filming an Agnicayana ritual in India.

American Museum of Natural History, New York, New York. Excavation at the Harappan site of Allahdino in the Malir Area, Karachi District, Pakistan.

American Research Center in Egypt, Princeton, New Jersey. Continued support for a program of research and excavation in Egypt: support for operation of the Cairo Center; maintenance of archeological research at the site of Hierakonpolis (Nekhen) in Edfu District; survey of Arabic scientific manuscripts in Cairo; maintenance of a stratified pharaonic site in the Egyptian delta at Mendes; Akhenaten Temple project; research in modern Arabic literature; continuation of an epigraphic and architectural survey at Luxor by the Oriental Institute; editing the Nag Hammadi codices; installation and completion of the Luxor Museum; preparation for publication of a manuscript by the late G. Legrain on the Late Egyptian sculpture from Karnak in the Cairo Museum; support for fellowships in Egyptian and Islamic studies.

American Schools of Oriental Research, Cambridge, Massachusetts. Excavations in salient areas of Punic and Roman Carthage (Tunisia).

Dumbarton Oaks Center for Byzantine Studies, Washington, D.C. A corpus of the ancient mosaics of Tunisia.

National Museum of Natural History, Department of Anthropology, Washington, D.C. Ethnotechnology of South Asia: Pakistan project.

Southern Methodist University, Dallas, Texas. Prehistory of the Western Desert, Egypt.

University of California, Berkeley, California. Archeological excavations at the Harappan seaport of Balakot, Pakistan.

University of Louisville, Louisville, Kentucky. Research and study of early medieval Polish archeology.

University of Michigan, Ann Arbor, Michigan. A scrutiny of Egyptian gold coins . . . in the collection of the Museum of Islamic Art in Cairo (Egypt).

University of Texas at Arlington, Arlington, Texas. Studies in predynastic Egypt.

Wayne State University, Detroit, Michigan. Prehistoric studies in the Siwa oasis region, Northwestern Egypt.

SYSTEMATIC AND ENVIRONMENTAL BIOLOGY (INCLUDING PALEOBIOLOGY)

Harvard University, Museum of Comparative Zoology, Cambridge, Massachusetts. Study of the dentition of Cretaceous mammals of Mongolia (Poland).

National Museum of Natural History, Department of Botany, Washington, D.C. Revision of *Trimen's Handbook to the Flora of Ceylon*; publication of the *Flora of Hassan District* (India).

National Museum of Natural History, Department of Entomology, Washington, D.C. Biosystematic studies of the insects of Ceylon.

National Museum of Natural History, Department of Paleobiology, Washington, D.C. Comparative study and geography of selected Devonian and Permian corals in Poland and the United States of America.

Oregon State University, Corvallis, Oregon. Activity budget studies of *Passer* populations in Poland.

Smithsonian Institution, Office of the Secretary, Washington, D.C. Indian migratory bird project.

Smithsonian Oceanographic Sorting Center, Washington, D.C. Mediterranean Marine Sorting Center (Tunisia); study of biological productivity in some tropical lakes of South India.

Smithsonian Tropical Research Institute, Balboa, Canal Zone. Ecology of freshwater lakes in Panama (Poland).

Southern Methodist University, Dallas, Texas. Recovery and study of vertebrate fossils from the Egyptian Western Desert.

The Institute of Ecology, Madison, Wisconsin. Support for international research coordination and synthesis by United States scientists participating in the International Biological Program (Egypt, India, Poland, Tunisia).

University of Arizona, Tucson, Arizona. Population biology and cytogenetics of desert mammals.

University of California, Berkeley, California. A biosystematic comparison of the Siphonocladales (Chlorophyta) (Tunisia); comparative study of Late Cretaceous Mongolian and North American mammals (Poland).

University of Colorado, Boulder, Colorado. Paleontological research in Tunisia and the Western Mediterranean.

University of Hawaii, Honolulu, Hawaii. Investigation of the alpheid shrimp of Pakistan.

University of Michigan, Ann Arbor, Michigan. Systematic studies of the molluscan genus *Bulinus* in Africa and adjacent regions (Egypt).

University of Wisconsin, Madison, Wisconsin. Integration of ecosystem analysis with studies of agro-ecosystems.

Utah State University, Logan, Utah. Systems analysis of the Pre-Saharan ecosystem of Southern Tunisia.

Yale University, New Haven, Connecticut. Preliminary study of the behavioral biology and ecology of Pakistan's Himalayan Foothill Rhesus monkeys.

ASTROPHYSICS AND EARTH SCIENCES

Duke University, Durham, North Carolina. Studies in Lake of Tunis.

Smithsonian Astrophysical Observatory, Cambridge, Massachusetts. Continued operation of the SAO/Uttar Pradesh State observing station at Naini Tal (India); establishing the position of the Polish latitude observatory at Borowiec by artificial satellite observations; reference coordinate systems for earth dynamics (Poland).

University of Chicago, Chicago, Illinois. Nucleosynthesis and the advanced stages of stellar evolution (Poland).

University of Pennsylvania, Philadelphia, Pennsylvania. Geochronology of alkaline complexes of the Southeastern desert of Egypt.

MUSEUM PROGRAMS

Festival of American Folklife, Smithsonian Institution, Washington, D.C. Old ways in the New World (Egypt, Poland, Tunisia).

National Archives Trust Fund, Washington, D.C. Preparation of animated educational film, "What is an archives?" (Poland)

National Museum of History and Technology, Department of Science and Technology, Washington, D.C. Study of Arabic manuscripts on medicine and pharmacy in Egypt.

National Portrait Gallery, Washington, D.C. Support of the National Portrait Gallery Bicentennial exhibit catalogue. (Poland)

National Trust for Historic Preservation, Washington, D.C. The advanced study of conservation and restoration methods applied to historic monuments and sites in Poland.

National Zoological Park, Washington, D.C. Preparation of animated educational film for new Lion-Tiger exhibit. (Poland)

Smithsonian Astrophysical Observatory, Cambridge, Massachusetts. Smithsonian around the world (India).

Smithsonian Institution, Office of the Assistant Secretary for Museum Programs, Washington, D.C. Polish-American seminar on organization systems and methodology for preserving cultural property. (Poland)

Smithsonian Institution, Smithsonian Magazine. Development of educational articles for *Smithsonian Magazine* on research abroad supported by the Smithsonian Foreign Currency Program (Egypt, Pakistan).

Theater in the Street, Inc., New York, New York. A study of street theater around the world. (India)

APPENDIX 3. *National Museum Act Grants Awarded in
Fiscal Year 1975*

TRAVEL/EXCHANGE PROGRAM

The Baltimore Museum of Art, Baltimore, Maryland 21218. Amount: \$16,000.00.

Buffalo and Erie County Historical Society, Buffalo, New York 14216. Amount: \$8,000.00.

Art Museum, Indiana University Foundation, Indiana University, Bloomington, Indiana 47401. Amount: \$485.00.

Neversink Valley Area Museum, Cuddebackville, New York 12729. Amount: \$871.00.

Texas A and I University, Kingsville, Texas 78363. Amount: \$2,436.00.

Mendocino County Museum, Willits, California 95490. Amount: \$880.00.

Fernbank Science Center, Atlanta, Georgia 30307. Amount: \$1,163.00.

Oklahoma Science and Arts Foundation, Oklahoma City, Oklahoma 73107. Amount: \$938.00.

Washington Archaeological Research Center, Ozette Archaeological Project, Neah Bay Laboratory, Neah Bay, Washington 98357. Amount: \$3,600.00.*

Saint-Gaudens National Historic Site, Windsor, Vermont 05089. Amount: \$1,819.00.

Junior Arts Center, Los Angeles, California 90027. Amount: \$1,040.00.

Huntington Library, Art Gallery and Botanical Gardens, San Marino, California 91108. Amount: \$1,500.00.*

Texas Historical Commission, Austin, Texas 78711. Amount: \$1,800.00.

The Metropolitan Museum of Art, New York, New York 10028. Amount: \$1,350.00.

Museum of Northern Arizona, Flagstaff, Arizona 86001. Amount: \$1,450.00.*

SEMINAR/WORKSHOP TRAINING PROGRAM

American Association of Zoological Parks and Aquariums, Wheeling, West Virginia 26003. Amount: \$11,296.00.

University of Science and Arts of Oklahoma, Chickasha, Oklahoma 73108. Amount: \$11,380.00.

Oregon Historical Society, Portland, Oregon 97205. Amount: \$1,600.00.

Texas Historical Commission and Winedale Inn, Austin, Texas 78711. Amount: \$6,107.00.

* Denotes conservation-related projects.

Western Association of Art Museums, Mills College, Oakland, California 94613.
Amount: \$20,297.00.

American Association for State and Local History, Nashville, Tennessee 37203.
Amount: \$49,450.00.

American Association of Mammalogists, American Museum of Natural History, New York, New York 10024. Amount: \$12,500.00.

American Association of Museums, Washington, D.C. 20007. Amount: \$30,581.00.

New York State Historical Association, Cooperstown, New York 13326. Amount: \$1,500.00.

National Trust for Historic Preservation, Washington, D.C. 20006. Amount: \$12,500.00.

Museums Collaborative, Inc., New York, New York 10021. Amount: \$14,138.00.

Association of Science-Technology Centers, Washington, D.C. 20037. Amount: \$10,000.00.

The American Numismatic Society, New York, New York 10032. Amount: \$14,130.00.*

Washington Region Conservation Guild, Washington, D.C. 20003. Amount: \$1,300.00.*

Association of Science-Technology Centers, Washington, D.C. 20037. Amount: \$4,000.00.

STIPEND SUPPORT FOR GRADUATE/PROFESSIONAL TRAINING AND FELLOWSHIPS

Conservation Center of the Institute of Fine Arts, New York University, New York, New York 10021. Amount: \$42,000.00*

University of Delaware, Newark, Delaware 19711. Amount: \$8,000.00.

The George Washington University, Office of Sponsored Research, Washington, D.C. 20006. Amount: \$8,000.00.

New York State Historical Association, Cooperstown, New York 13326. Amount: \$35,000.00.

Museum Associates, Los Angeles County Museum of Art, Los Angeles, California 90036. Amount: \$10,200.00.

University of Michigan, Ann Arbor, Michigan 48055. Amount: \$18,000.00.

SPECIAL STUDIES AND RESEARCH PROGRAM

Conservation Center, Institute of Fine Arts, New York University, New York, New York 10021. Amount: \$14,000.00.*

Tekart Associates, University of California, San Diego, La Jolla, California 92037. Amount: \$8,284.00.*

Museum of the Hudson Highlands, The Cornwall Neighborhood Museum Association, Cornwall-on-Hudson, New York 12520. Amount: \$1,500.00.

American Association for State and Local History, Nashville, Tennessee 37203. Amount: \$43,544.00.*

American Association of Youth Museums, Charlotte Nature Museum, Charlotte, North Carolina 28209. Amount: \$25,556.00.

The Heckscher Museum, Huntington, New York 11743. Amount: \$23,110.00.*

New York State Historical Association, Cooperstown, New York 13326. Amount: \$5,000.00.

PROFESSIONAL ASSISTANCE PROGRAM

AAM/ICOM (American Association of Museums/International Council of Museums), Washington, D.C. 20007. Amount: \$10,000.00.

National Conservation Advisory Council, Greenfield Village and Henry Ford Museum, Dearborn, Michigan 48121. Amount: \$27,282.00.*

American Association for State and Local History, Nashville, Tennessee 37203. Amounts: \$26,418.00 and \$35,880.00.

American Association of Museums, Washington, D.C. 20007. Amount: \$29,297.00.

The Association of Systematics Collections, University of Kansas, Museum of Natural History, Lawrence, Kansas 66045. Amount: \$13,589.00.

New England Regional Conference/AAM, c/o Maine State Museum, State House, Augusta, Maine 04330. Amount: \$22,010.00.

National Conservation Advisory Council, c/o Greenfield Village and Henry Ford Museum, Dearborn, Michigan 48121. Amounts: \$6,750.00 and \$56,874.00.*

American Association of Museums, Washington, D.C. 20007. Amounts: \$28,349.00 and \$3,100.00.

APPENDIX 4. *Progress on Building Construction, Restoration, and Renovation*

Anacostia Neighborhood Museum. The construction of the Exhibit Design and Production Laboratory was completed in April 1975. Additional work for interior partitioning and painting will be initiated in early fiscal year 1976.

Arts and Industries Building. Major phase of restoration work is 65 percent completed. Scheduled completion is February of 1976. Major roof and window repairs to be initiated in fiscal year 1976 for completion that year.

Chesapeake Bay Center for Environmental Studies. Construction of the Visitor Center and Dormitory facility was completed in March 1975.

Cooper-Hewitt Museum of Decorative Arts and Design. Renovation of the Carnegie Mansion was initiated in September 1974. The major phase of the work will be completed in October 1975.

History and Technology Building. Museum sales shop was completed in May 1975. Library plans completed with construction to be initiated by June or July of 1975. Completion scheduled for three months after starting date. Plans for sixth-floor addition are 60 percent completed. Completion scheduled for latter part of fiscal year 1976.

National Air and Space Museum. Construction is 99 percent completed. In April 1975, NASM started occupancy of several exhibit and administrative areas. The building is scheduled for public opening in July 1976.

National Zoological Park. Renovation of the Monkey House was completed and it was opened to the public on May 24, 1975. Also, during fiscal year 1975 construction work continued on the Lion-Tiger Exhibit which will cost nearly \$3 million and will be completed by January 1976. Contracts also were awarded for reconstruction of exterior yards around the Elephant House and the Bird House.

Major renovation projects completed during fiscal year 1975 included painting the Great Flight Cage, replacing glass and painting in the Reptile House, making improvements in the Marmoset House, and completing the Cheetah yards.

The architect continued preparation of plans for major Master Plan improvements including the Education-Administration Building; bear exhibits; general services and parking facility; and exhibits for beavers, sea lions, and wolves.

Natural History Building. The West Court facility is under construction, and work will be completed by May 1976. North Foyer alterations including installation of escalator are underway, and work is to be completed by October 1975. Construction in the East Court of the Osteology Laboratory is progressing, and work is to be completed by August 1975.

Silver Hill Facility. Construction of Buildings #24 and #25 were completed in April 1975. Additional work for construction of mezzanine is to be completed by August 1975.

South Yard. Demolition and first-phase construction of South Yard area to be initiated in July 1975. Completion scheduled for latter part of fiscal year 1976, prior to Bicentennial celebration.

Bicentennial Exhibit Construction. The exhibits "Nation of Nations," "We the People," "Centennial 1876," and "Our Changing Land" are all nearing construction completion in fiscal year 1976.

APPENDIX 5. *Publications of the Smithsonian Institution Press
in Fiscal Year 1975*

GENERAL PUBLICATIONS

TRADE PUBLICATIONS

- Peter Bermingham. *American Art in the Barbizon Mood*. 192 pages, 4 color and 143 black-and-white illustrations. April 30, 1975. Cloth: \$20.00.
- Wilton S. Dillon, editor. *The Cultural Drama: Modern Identities and Social Ferment*. Foreword by S. Dillon Ripley. 328 pages, 13 black-and-white illustrations. October 28, 1974. Cloth: \$17.50.
- Owen Gingerich, editor. *The Nature of Scientific Discovery*. 616 pages, 110 black-and-white illustrations. June 10, 1975. Cloth: \$15.00.
- James M. Goode. *The Outdoor Sculpture of Washington, D.C. A Comprehensive Historical Guide*. 632 pages, 516 black-and-white illustrations (cloth); 528 pages, 455 black-and-white illustrations (paper). September 17, 1974. Cloth: \$15.00; paper: \$4.95.
- Luis G. Lumbreras. *The Peoples and Culture of Ancient Peru*. Translated by Betty J. Meggers. vii + 248 pages, 372 black-and-white illustrations. October 10, 1974. Cloth: \$15.00.
- J. Jefferson Miller II. *English Yellow-Glazed Earthenware*. xviii + 126 pages, 60 color and 74 black-and-white illustrations. March 18, 1975. Cloth: \$20.00.
- Lillian B. Miller. "The Dye is Now Cast . . ." *The Road to American Independence, 1774-1776*. xvi + 328 pages, 166 black-and-white illustrations. May 30, 1975. Cloth: \$17.50.
- John R. Swanton. *The Indian Tribes of North America*. vi + 726 pages, 5 maps. Fourth reprint. May 15, 1975. Cloth: \$20.00.
- Joshua S. Taylor. *To See Is To Think: Looking at American Art*. 120 pages, 7 color and 88 black-and-white illustrations. June 24, 1975. Cloth: \$10.00; paper: \$4.95.

ANNUAL REPORTS

- American Historical Association. *Annual Report, 1973*. xvi + 166 pages. December 20, 1974. Paper: \$1.90.
- National Zoological Park. *National Zoological Park 18-Month Report. July 1, 1971-December 31, 1972*. vi + 66 pages, 66 black-and-white illustrations, 2 tables. January 13, 1975.
- Smithsonian Institution. *Smithsonian Year 1974. Annual Report of the Smithsonian Institution for the Year Ended June 30, 1974*. vii + 500 pages, 117 black-and-white illustrations. January 15, 1975. Paper: \$6.65.
- Smithsonian International Exchange Service. *1974 Annual Report*. 8 pages. March 12, 1975.

T. Ames Wheeler, Treasurer. *Smithsonian Institution Financial Report for Fiscal Year 1974: As Published in Smithsonian Year 1974*. 36 pages. January 15, 1975.

Woodrow Wilson International Center for Scholars. *Annual Report 1973-1974*. iv + 60 pages, 18 black-and-white illustrations. February 10, 1975.

EXHIBITION CATALOGUES

Anacostia Neighborhood Museum

The Barnett-Aden Collection. 192 pages, 15 color and 136 black-and-white illustrations. March 17, 1975. Paper: \$10.00.

Exhibition 1974-75. 45 pages, 77 black-and-white illustrations. December 11, 1974. Paper: \$1.70.

National Collection of Fine Arts

Peter Bermingham. *American Art in the Barbizon Mood*. 192 pages, 4 color and 143 black-and-white illustrations. January 16, 1975. Paper: \$7.70.

Lois Marie Fink, and Joshua C. Taylor. *Academy: The Academic Tradition in American Art*. 272 pages, 212 black-and-white illustrations. June 4, 1975. Paper: \$7.30.

Chaim Gross: Sculpture and Drawings. 47 pages, 2 color and 27 black-and-white illustrations. September 19, 1974. Paper: \$2.75.

Made in Chicago. 80 pages, 11 color and 46 black-and-white illustrations. November 15, 1974. Paper: \$4.40.

Pennsylvania Academy Moderns: 1910-1940. 40 pages, 2 color and 41 black-and-white illustrations. May 7, 1975. Paper: \$2.00.

National Museum of History and Technology

Cynthia A. Hoover. *Music Machines: American Style*. 140 pages, 237 black-and-white illustrations. Reprint. July 16, 1974. Paper: \$2.75.

Claudia B. Kidwell, and Margaret C. Christman. *Suiting Everyone: The Democratization of Clothing in America*. 208 pages, 59 color and 279 black-and-white illustrations. September 17, 1974. Paper: \$11.05.

Joanna Cohan Scherer. *Indian Images: Photographs of North American Indians, 1847-1928*. National Anthropological Archives. 31 pages, 14 black-and-white illustrations. Reprint. March 4, 1975. Paper: \$1.05.

We the People: The American People and Their Government. 164 pages, 6 color and 304 black-and-white illustrations. June 3, 1975. Paper: \$1.75.

National Portrait Gallery

Black Presence. 72 pages, 50 black-and-white illustrations. Reprint. July 13, 1974. Paper: \$2.05.

Lillian B. Miller. "The Dye is Now Cast . . ." *The Road to American Independence, 1774-1776*. xvi + 328 pages, 166 black-and-white illustrations. April 17, 1975. Paper: \$11.25.

Renwick Gallery of the National Collection of Fine Arts

A Modern Consciousness: D. J. DePree and Florence Knoll. 32 pages, 30 black-and-white illustrations. June 17, 1975. Paper: \$1.80.

Boxes and Bowls: Decorated Containers by Nineteenth Century Haida, Tlingit,

Bella Bella, and Tsimshian Indian Artists. 96 pages, 47 black-and-white illustrations. November 22, 1974. Paper: \$3.95.

Shaker: Furniture and Objects from the Faith and Edward Deming Andrews Collections Commemorating the Bicentennial of the American Shakers. 88 pages, 1 color and 66 black-and-white illustrations. Reprint. May 27, 1975. Cloth: \$14.95.

EXHIBITION CHECKLISTS

National Collection of Fine Arts

Eight from California. 18 pages, 8 black-and-white illustrations. January 21, 1975.

Horatio Shaw, 1847-1918. 7 pages, 6 black-and-white illustrations. September 11, 1974.

Ilya Bolotowsky. 4 pages, 1 color and 1 black-and-white illustration. January 14, 1975.

Two Decades of American Prints: 1920-1940. 12 pages, 1 black-and-white illustration. September 16, 1974.

National Museum of History and Technology

Etching as a Painter's Medium in the 1880's. 4 pages, 2 black-and-white illustrations. August 16, 1974.

Lead and Zinc Mining Scenes of the Past: Oil Paintings by Carol Riley. 4 pages, 1 black-and-white illustration. December 17, 1974.

Mr. Audubon and Mr. Bien: An Early Phase in the History of American Chromolithography. 11 pages, 2 color illustrations. March 14, 1975.

Renwick Gallery of the National Collection of Fine Arts

Paintings in the Grand Salon and Octagon Room of the Renwick Gallery, Lent by the Corcoran Gallery of Art. 4 pages, 1 black-and-white illustration. Reprint. March 11, 1975.

BOOKS

Bicentennial Office

The American Experience. Smithsonian Institution American Revolution Bicentennial Program. 88 pages, 20 black-and-white illustrations. February 7, 1975.

Division of Performing Arts

Smithsonian Institution Festival of American Folklife: A Bicentennial Presentation. 44 pages, 8 black-and-white illustrations. June, 1975.

Hirshhorn Museum and Sculpture Garden

The Hirshhorn Museum and Sculpture Garden, Smithsonian Institution. 50 pages. September 19, 1974.

National Museum of History and Technology

A Checklist of Keyboard Instruments at the Smithsonian Institution. Division of Musical Instruments. viii + 87 pages, 7 figures. May 1, 1975. Paper: \$2.00.

Carl H. Scheele. *Neither Snow, Nor Rain . . . The Story of the United States Mails.* Hall of Stamps and Mails. iv + 100 pages, 86 black-and-white illustrations. Reprint. September 6, 1974. Paper: \$1.80.

National Museum of Natural History

J. Meester, and H. W. Setzer, editors. *The Mammals of Africa: An Identification Manual*. Fascicle III of V. Parts 1.2, 1.3, 1.4, 1.5, 3, 3.2, 6, 11, and 14. Loose-leaf Inserts. August 29, 1974. Paper: \$5.00.

Office of Academic Studies

Smithsonian Opportunities for Research and Study in History—Art—Science. 141 pages. October 21, 1974.

Office of International and Environmental Programs

Peter H. Freeman: *Coastal Zone Pollution by Oil and Other Contaminants: Guidelines for Policy and Planning. Based Upon a Case Study in Indonesia in 1973*. x + 68 pages, 2 figures, 10 tables. May 16, 1975.

The Environmental Impact of a Large Tropical Reservoir: Guidelines for Policy and Planning. Based Upon a Study of Lake Volta, Ghana, in 1973 and 1974. viii + 88 pages, 6 figures, 7 plates, 6 tables. May 19, 1975.

The Environmental Impact of Rapid Urbanization: Guidelines for Policy and Planning. Based Upon a Study of Seoul, Korea, in 1972 and 1973. xii + 88 pages, 4 figures, 6 plates, 19 tables. May 19, 1975.

Office of Protection Services

Smithsonian Institution Police and Guard Manual and Regulations for the Security Force. v + 82 pages. Reprint. December 31, 1974.

Office of Public Affairs

Increase and Diffusion: A Brief Introduction to the Smithsonian Institution. 99 pages, 33 black-and-white illustrations. June 13, 1975.

Smithsonian Institution Traveling Exhibition Service

Update: Bicentennial News. 48 pages, 86 black-and-white illustrations. May 16, 1975.

BOOKLETS

Hirshhorn Museum and Sculpture Garden

Looking at Abstract Art: A Tour To Give Yourself. 7 pages, 6 black-and-white illustrations. September 30, 1974.

National Air and Space Museum

Otto Lilienthal and Octave Chanute: Pioneers of Gliding. 6 pages, 6 black-and-white illustrations. January 6, 1975.

National Museum of History and Technology

Audrey B. Davis. *The Dentist and His Tools*. 11 pages, 29 figures. November 8, 1974. Paper: \$0.75.

A Nation of Nations. 8 pages, 2 black-and-white illustrations. November 1, 1974.

National Portrait Gallery

In the Minds and Hearts of the People: Prologue to Revolution, 1780-1774. A teacher's guide. 6 pages, 3 black-and-white illustrations. September 19, 1974. Paper: \$1.45.

Office of Museum Programs

Conservation Information. 6 pages. June 16, 1975.

Smithsonian Institution Traveling Exhibition Service

Update: Bicentennial Special. 28 pages, 51 black-and-white illustrations. August 12, 1974.

Woodrow Wilson International Center for Scholars

Fellowship and Guest Scholar Program. 12 pages. March 11, 1975.

FOLDERS

Anacostia Neighborhood Museum

Fifth Annual D.C. Art Association Exhibition Calendar of Events. November 13, 1974.

Chesapeake Bay Center for Environmental Studies

Animal Adaptations: Insects and Spiders. 17 black-and-white illustrations. September 11, 1974.

Community Comparison: Forest and Old Field. 10 black-and-white illustrations. September 11, 1974.

Seeing the Trees for the Forest: A Census Activity. 8 black-and-white illustrations. September 11, 1974.

Division of Performing Arts

The Smithsonian Institution Performance Service. Folder with 9 inserts. April 4, 1975.

Hirshhorn Museum and Sculpture Garden

Highlights from the Hirshhorn Museum and Sculpture Garden. 11 black-and-white illustrations. September 30, 1974.

Hirshhorn Museum and Sculpture Garden, Smithsonian Institution. Floor plan. 6 black-and-white illustrations. February 18, 1975.

The Lower Level. 12 black-and-white illustrations. September 30, 1974.

Newsletter of the Hirshhorn Museum and Sculpture Garden. 6 black-and-white illustrations. July 29, 1974.

The Plaza. 8 black-and-white illustrations. September 30, 1974.

The Second Floor. 14 black-and-white illustrations. September 30, 1974.

Sunday Lecture Series. 1 black-and-white illustration. February 18, 1975.

Third Floor. 10 black-and-white illustrations. September 30, 1974.

National Air and Space Museum

Amelia Earhart. 4 black-and-white illustrations. January 6, 1975.

Life in the Universe: Holiday Lecture Series for High School Students. 5 black-and-white illustrations. December 23, 1974.

North American P-51 Mustang. 17 black-and-white illustrations. January 27, 1975.

National Collection of Fine Arts

A Future for Our Past: The Conservation of Art. July 5, 1974.

Bicentennial Inventory of American Paintings Executed before 1914. Reprint. March 3, 1975.

Calendar of the Smithsonian Institution. Published monthly from July 1974, through June 1975.

National Collection of Fine Arts: A Museum of the Smithsonian Institution. Floor plan. 4 black-and-white illustrations. Reprint. January 23, 1975.

The National Collection of Fine Arts, Smithsonian Institution. 6 black-and-white illustrations, 1 map. January 23, 1975.

The Rise of the American Avant-Garde: 1910-1930. 1 black-and-white illustration. March 6, 1975.

National Museum of History and Technology

Audrey B. Davis. *The Better To Hear You With: Announcing the Greibach Donation.* National Museum of History and Technology. March 3, 1975.

National Museum of Natural History

National Anthropological Archives. 2 black-and-white illustrations. July 5, 1974.

The Islamic Archives. 2 black-and-white illustrations. October 28, 1974.

National Zoological Park

A Guide to the National Zoological Park Library. Smithsonian Institution Libraries Orientation Leaflet #2. October 23, 1974.

Office of Elementary and Secondary Education

Let's Go to the Smithsonian: Bulletins for Schools. September 1974 through Spring/Summer 1975. 29 black-and-white illustrations.

Smithsonian Intern '75. February 18, 1975.

Office of Museum Programs

National Museum Act Program—Fiscal Year 1975. July 5, 1974.

Smithsonian Institution Workshop Series—In Museum Administration, Spring 1975. January 24, 1975.

Smithsonian Institution Workshop Series—In Museum Exhibit Methods—June, 1975. April 29, 1975.

Office of Public Affairs

Smithsonian Institution, Washington, D.C. Guide map. 2 black-and-white illustrations. Reprint. December 13, 1974.

Radiation Biology Laboratory

A Guide to Smithsonian Institution Radiation Biology Laboratory Library. Smithsonian Institution Libraries Orientation Leaflet #3. June 20, 1975.

PORTFOLIOS

National Museum of Natural History

Prehistoric Life. 15 pages, 13 black-and-white illustrations. August 19, 1974. Paper: \$1.50.

Traditional African Cultures. 12 pages, 27 black-and-white illustrations. November 21, 1974. Paper: \$1.50.

Office of Elementary and Secondary Education

Let's Go to the Smithsonian: Learning Opportunities for Schools, 1974-75. 24 pages, 28 black-and-white illustrations. August 30, 1974.

POSTERS

Anacostia Neighborhood Museum

Blacks in the Westward Movement. January 30, 1974.

Hirshhorn Museum and Sculpture Garden

Inaugural Exhibition. August 16, 1974.

National Collection of Fine Arts

Chaim Gross: Sculpture and Drawings. August 29, 1974.

Contemporary Nigerian Art: Craftsmen from Oshogbo. July 15, 1974.

Portfolio Day, December 7, 1974. November 22, 1974.

National Portrait Gallery

"The Dye is Now Cast . . ." April 4, 1975.

Office of International and Environmental Programs

There Are Opportunities Overseas Through the Smithsonian-Peace Corps Environmental Program. November 5, 1974.

Smithsonian Tropical Research Institute

Restricted Area: Warning. March 3, 1975.

SHOWCARDS

Hirshhorn Museum and Sculpture Garden

Inaugural Exhibition. August 9, 1974.

National Collection of Fine Arts

High School Graphics IV. March 5, 1975.

INVITATIONS

Anacostia Neighborhood Museum

Blacks in the Westward Movement. January 30, 1975.

D.C. Art Association Exhibition 1974-75. November 8, 1974.

Hirshhorn Museum and Sculpture Garden

Art and Culture in the Twentieth Century: Four Interactions. April 4, 1975.

National Collection of Fine Arts

Academy: The Academic Tradition in American Art. May 16, 1975.

Chaim Gross: Sculpture and Drawings. August 29, 1974.

High School Graphics IV. March 27, 1975.

Kaleidoscope: A Day for Children. May 5, 1975.

Made in Chicago. October 9, 1974.

Pennsylvania Academy Moderns: 1910-1940. April 29, 1975.

"Tribute to the Arts in the Americas." February 26, 1975.

National Collection of Fine Arts and National Portrait Gallery

The Annual Convocation of the College Art Association. January 10, 1975

Renwick Gallery of the National Collection of Fine Arts

A Modern Consciousness: D. J. DePree and Florence Knoll. March 27, 1975.

Contemporary Textile Art from Austria. November 21, 1974.

Craft Multiples. June 16, 1975.

Figure and Fantasy. September 24, 1974.

H. H. Richardson and His Office. March 10, 1975.

MISCELLANEOUS

National Collection of Fine Arts

Some Useful Rules for Handling Works of Art. Flyer. July 5, 1974.

Questions and Comments. Postcard. January 26, 1975.

Smithsonian Tropical Research Institute

Barro Colorado Island. Map. October 7, 1974.

SERIES PUBLICATIONS

SMITHSONIAN ANNALS OF FLIGHT

10. Frederick C. Durant III, and George S. James, editors. "First Steps Toward Space. Proceedings of the First and Second History Symposia of the International Academy of Astronautics at Belgrade, Yugoslavia, 26 September 1967, and New York, U.S.A., 16 October 1968." viii + 308 pages, 232 figures, 2 tables. August 13, 1974.

SMITHSONIAN CONTRIBUTIONS TO ANTHROPOLOGY

17. William Trousdale. "The Long Sword and Scabbard Slide in Asia." xii + 322 pages, 100 figures, 24 plates, 5 tables. May 8, 1975.

18. Douglas H. Ubelaker. "Reconstruction of Demographic Profiles from Ossuary Skeletal Samples: A Case Study from the Tidewater Potomac." xii + 80 pages, 27 figures, 45 tables. August 18, 1974.

SMITHSONIAN CONTRIBUTIONS TO ASTROPHYSICS

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APPENDIX 6. *Bibliography of Research Supported Through the Facilities of the Smithsonian Tropical Research Institute Marine Laboratories During Their First Ten Years, 1965-1975*

The summer of 1975 marks the tenth anniversary of the establishment of a Marine Program at STRI. During the summer of 1965 small laboratories were opened to take advantage of the unique access to two oceans afforded by the Isthmus of Panama. The great variety of marine life and habitats found in the tropical regions of the Caribbean and Eastern Pacific has attracted many students, fellows, and visiting scientists in addition to our own staff of marine biologists. These investigators have published over 180 scientific papers on work performed at STRI facilities. These studies are listed below and include such diverse areas as: the genetics of fishes, physiology of tuna and sea snakes, the effects of oil on corals, the ecology and development of coral reefs, the behavior of a variety of marine organisms including fishes, crabs, sea snakes, starfishes and squids. Such research has contributed toward establishing a worldwide reputation for STRI.

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- McNeil, William, "An Annotated Bibliography of Indiana Folklore." *Indiana Folklore*, number 1, 1973.
- . [Review] *The Art of Ragtime*, by William J. Schafer and Johannes Riedel. *Folklore Forum*.
- . [Review] *John Gordon McCurry: The Social Harp*, edited by John Garst and Daniel Patterson. *Journal of American Folklore*.
- Proschan, Frank (Research Associate). "Walter Vinson, 1901-1975," *Living Blues*, number 21 (May-June, 1975).
- Rinzler, Ralph, "Bill Monroe," In *Stars of Country Music*, edited by Bill Malone and Judith McCulloch. Urbana, Illinois: University of Illinois Press, 1975.
- Taylor, J. R. [Eleven articles on jazz.] *Village Voice*.
- . [Jazz record reviews] *University Review*, September 1974.
- . [Two reviews of jazz performances] *Zoo World*.
- Vennum, Thomas (Research Associate). "Ojibwa Origin Migration Songs of the Mitewiwin," *Sixth Annual Algonquian Conference*, Ottawa, Canada.
- Williams, Martin. "And What Might a Jazz Composer Do?" *Music Educators Journal*, volume 61, number 5 (January 1975).
- . "Jazz Music, A Brief History." *USA* (published by the Institute of U.S. Studies of the Academy of Sciences of the U.S.S.R.), October 1974.
- . "Scott Joplin, the Ragtime King, Rules Once More." *Smithsonian Magazine*, volume 15, number 7 (October 1974).

OFFICE OF SMITHSONIAN SYMPOSIA AND SEMINARS

- Dillon, Wilton S. "Latent and Manifest Messages of Ceremony." In *The Nature of Scientific Discovery: a Symposium Commemorating the 500th Anniversary of the Birth of Nicolaus Copernicus*, pages 76-81. Washington, D. C.: Smithsonian Institution Press, 1975.
- . "Margaret Mead: President-Elect 1974," *Science* 26 April 1974, volume 184, number 4135 (26 April 1974), pages 490-493.
- . "On Cutting Culture Down to Size," (essay review of *The Interpretation of Cultures: Selected Essays*, by Clifford Geertz. *Teachers College Record*, volume 76, (September 1974).
- . "History As Comparative Symbology," [Essay Review] *Dramas, Fields and Metaphors*, by Victor Turner. *American Scholar*, volume 44, (Summer 1975).
- , editor. *The Cultural Drama: Modern Identities and Social Ferment*. Washington, D. C.: Smithsonian Institution Press, 1974, 328 pages.

SMITHSONIAN ASSOCIATES

- Lee, Margaret V. (Resident Associate), art director, and Janet W. Solinger (Resident Associate), producer, "Hirshhorn Museum and Sculpture Garden Commemorative Poster Set." Original serigraphs by Larry Rivers and Robert Indiana; poster reproductions of works in the collection by Willem de Kooning and Kenneth Noland. October 1974.

NATIONAL GALLERY OF ART

- Blanchard, Jeffrey (Summer Intern). "Theater." In *Jacques Callot: Prints and Related Drawings*, exhibition catalogue, pages 57-151. Washington: National Gallery of Art, 1975.
- Bohlin, Diane DeGrazia. "Some Unpublished Drawings by Bertoia." *Master Drawings*, volume 12, number 4 (Winter, 1974), pages 359-367.
- Brown, David A. "Further Observations on the Project for a Standard by Verrocchio and Leonardo." *Master Drawings*, volume 12, number 2, 1974, pages 127-133.
- Cain, J. Fred. Introduction to *James Davis*, exhibition catalogue. Washington: Middendorf Gallery, 1975.
- Carmean, E. A., Jr. "Modernist Art 1960-1970." *Studio International*, volume 188 (July-August 1974), pages 9-13.
- . *Friedel Dzubas*, exhibition catalogue. Houston: The Museum of Fine Arts, 1974.
- Collins, Jane. "Cataloguing and Classifying the Exhibition Catalogue." *Special Libraries*, volume 66, number 7 (July 1975), pages 313-320.
- Feller, Robert L. (Senior Fellow), Rutherford J. Gettens and Elisabeth West FitzHugh. "Calcium Carbonate Whites." *Studies in Conservation*, volume 19 (1974), pages 157-184.
- Ferguson, Carra (Fellow), Compiler (under the direction of Carl Nordenfalk). *Medieval & Renaissance Miniatures from the National Gallery of Art*, exhibition catalogue. Washington: National Gallery of Art, 1975.
- Keisch, Bernard (Senior Fellow). "Mössbauer Effect Spectrometry Without Sampling: Applications to Art and Archaeology." In *Archaeological Chemistry*, edited by Curt Beck, Advances in Chemistry Series Number 138. Washington, D. C.: American Chemical Society, 1974, pages 186-206.
- . "Mössbauer Effect Studies of Fine Arts." Colloque Number 6, Supplement to, *Journal de Physique*, volume 35, Number 12 (1974), pages C6-151.
- Krill, John "Condition and Watermarks." In *Jacques Callot: Prints and Related Drawings*, exhibition catalogue, pages 314-339. Washington: National Gallery of Art, 1975.
- Lehrer, Ruth. Fine "The Janus Press." *The Private Library* (quarterly journal of the Private Libraries Association), second series, volume 7, number 3 (Autumn 1974), pages 91-121.
- Lewis, C. Douglas. "Disegni Autografi del Palladio non Pubblicati: Le Pianta per Caldogno e Maser (1548-1549)." *Bollettino del Centro Internazionale di Studi di Architettura* volume 15, (1973; published 1975), pages 209-215.
- . "A vindication of Vasari: the Rediscovery of Sanmicheli's Palace for Girolamo Corner at Piombino." *Architectura*, 1975, number 1.
- Nordenfalk, Carl (Kress Professor in Residence, 1972-73), Director of compilation. *Medieval & Renaissance Miniatures from the National Gallery of Art*, exhibition catalogue. Washington: National Gallery of Art, 1975.
- Parkhurst, Charles. "An Appreciation." In *Frasconi Against the Grain, The Woodcuts of Antonio Frasconi*, pages 143-147. New York: Macmillan Publishing Co., 1975.
- . "Art Museums: Kinds, Organization, Procedures, and Financing." In *On Understanding Art Museums*, edited by Sherman E. Lee, pages 3-97, Englewood Cliffs, New Jersey: Prentice-Hall, 1975.
- Robinson, Andrew. "Religious Experience." In *The Logic of God: Theology and Verification*, edited by Malcolm Diamond and Thomas Litzenberg, pages 409-432. Indianapolis: Bobbs-Merrill, 1975.
- . [Review] *The Etchings of the Tiepolos: Complete Edition* by Aldo Rizzi. *The Art Bulletin*, volume 56, number 2, pages 295-298.
- . [Ten short reviews] *Nouvelles de l'estampe* and *Library Journal*.

- Russell, H. Diane *Jacques Callot: Prints and Related Drawings*, exhibition catalogue. Washington: National Gallery of Art, 1975.
- Schaff, David S. (Fellow), Compiler (under the direction of Carl Nordenfalk). *Medieval & Renaissance Miniatures from the National Gallery of Art*, exhibition catalogue. Washington: National Gallery of Art, 1975.
- Vikan, Gary (Fellow), editor and compiler (under the direction of Carl Nordenfalk). *Medieval & Renaissance Miniatures from the National Gallery of Art*, exhibition catalogue. Washington: National Gallery of Art, 1975.
- Voris, Anna M., compiler. *European Paintings: an Illustrated Summary Catalogue*. Washington: National Gallery of Art, 1975.

APPENDIX 8. *Selected Contributions of the Smithsonian Institution Staff in Fiscal Year 1975*

SPECIAL PROJECTS, OFFICE OF THE SECRETARY

LECTURES

- Goode, James M. "The Outdoor Sculpture of Washington, D.C." Radio Smithsonian, August 19, 1975; Dimock Art Gallery of George Washington University, September 30, 1974; Smithsonian Associates, September 16, 1974; Radio WAMU-FM of American University, September 20, 1974; Colonial Dames Chapter of Northern Virginia, October 14, 1974; Rotary Club, Alexandria, Virginia, November 5, 1974; Colonial Dames Chapter of the Daughters of the American Revolution, December 3, 1974; and The Victorian Society in America, New York City Chapter, April 21, 1975.
- . "The Architectural History of Society Hill, Washington Square, and Independence Square, Philadelphia, Pa." Smithsonian Associates, November 22, 1974, February 15, 21, 1975, March 22, 1975, April 5, 1975, and May 3, 1975.
- . "Great Country Houses of Shropshire, Derbyshire, Yorkshire and Somerset, England." Smithsonian Associates, January 9, 16, and 23, 1975.
- . "The Architectural History of Charlottesville, Virginia." Smithsonian Associates, April 26, 1975, May 2, and 10, 1975.
- . "The History of the Smithsonian Building," Princeton Club, May 28, 1975; Phi Beta Kappa chapter of Washington, D.C., March 29, 1975; White House Fellows, June 12, 1975.
- Lehman, Susan N. "The History of the Smithsonian Building." District of Columbia Chapter of the American Women's Business Association, July 8, 1975; Princeton Club of Washington, D. C., May 28, 1975; Smithsonian Associates, June 10, 14, 17, 21, and 24, 1975.

SCIENCE

CENTER FOR THE STUDY OF MAN

LECTURES AND SEMINARS

- Stanley, Sam. "History and Progress of Population Project," Seminar on The Cultural Consequences of Population Change, Bucharest, Romania, August 14, 1974.
- . "Some Recent Research on American Indian Economic Development." Yale University, Department of Anthropology Seminar, New Haven, Connecticut, November 1, 1973.
- . "The Smithsonian Institution's Urgent Anthropology Small Grants Program." International Meeting on Urgent Anthropology organized jointly by the Canadian National Committee for ICOM, the Canadian Commission for UNESCO and the Canadian National Museum of Man, Ottawa, Canada, December 3, 1974.

———. "The Impact of Economic Development on American Indian Communities." Century Club of Harvard University School of Business, Cambridge, Massachusetts, February 24, 1975.

National Anthropological Film Center

Sorenson, E. Richard. "Social Organization in the Facial Expression of Emotion." Conference on Culture and Communication, Temple University, March 1975.

———. "Growing Up As A Fore" (film presentation and lecture) National Museum of Natural History, April 1975.

Sorenson, E. Richard and Kalman Muller. "Huichol Enculturation, A Preliminary Report." American Anthropological Association Annual Meeting, Mexico City, November 1974.

CHESAPEAKE BAY CENTER FOR ENVIRONMENTAL STUDIES

Falk, John H. "Science Education—The Near Future. Turning Classrooms Inside Out." AAAS Conference on Science Curricula and Teaching in Elementary and Junior High Schools, College Park, Maryland. April 1975.

FORT PIERCE BUREAU

SEMINARS

Young, David K. "Indian River Study." Audubon Society, St. Lucie County, January 2, 1975.

———. "Indian River Study." National Museum of Natural History, Smithsonian Institution, January 9, 1975.

———. "Animal-Sediment Relationships." Chesapeake Bay Institute, Johns Hopkins University, March 20, 1975.

———. "Seagrass-associated Benthos of the Indian River Estuary, Florida." Bermuda Biological Station, May 16, 1975.

———. "Seagrass-associated Benthos of the Indian River Estuary, Florida." Marine Science Department, University of South Florida, May 23, 1975.

———. "Seagrass-associated Benthos of the Indian River Estuary, Florida." Harbor Branch Foundation, Inc. May 30, 1975.

PAPERS

Rice, M. E. "Sipuncula Associated with Coral Communities." International Symposium on Indo-Pacific Tropical Reef Biology. Guam and Palau. June 23–July 5, 1974.

———. "Some Aspects of Larval Development and Metamorphosis in the Sipuncula." American Society of Zoologists, Annual Meeting, Tucson, Arizona, December 27–30, 1974.

———, moderator. (Contributed paper session) Division of Invertebrate Zoology, American Society of Zoologists, Annual Meeting, Tucson, Arizona, December 27–30, 1974.

Rice, M. E., and Douglas S. Putnam. "Sipunculan Fauna of a Coral Reef Community off the Belizean Coast, Caribbean Sea." International Symposium on Indo-Pacific Tropical Reef Biology. Guam and Palau. June 23–July 5, 1974.

Young, D. K. and M. W. Young. "Community Structure of the Benthos Associated with Sea Grasses of the Indian River Estuary, Florida." Symposium on Ecology of Marine Benthos, Baruch Institute, University of South Carolina, May 7–10, 1975.

NATIONAL AIR AND SPACE MUSEUM

LECTURES AND SEMINARS

- Bondurant, Russell Lynn. "The Planetarium—Artistically Speaking." Annual Meeting of the International Society of Planetarium Educators, Atlanta, Georgia, October 10, 1974.
- Boyne, Walter J. (Principal speaker) Northern Virginia Flight, Air Force Association Meeting, Bolling Air Force Base, Washington, D.C., May 20, 1975.
- Casey, Louis S. "Conquering the Air." Smithsonian Associates, Technology History Series, June 11, 1975.
- Chamberlain, Von Del. "The World's Finest Sky Theaters/Astronomy in Parks." 143rd Meeting of the American Astronomical Society, Rochester, New York, August 22, 1974.
- . "Sky Interpretation." Meeting of the Rocky Mountain and High Plains Regions of the Association of Interpretative Naturalists, September 27, 1974.
- . "Planetarians: Interpreters of the Sky." Second Annual Meeting of the International Society of Planetarium Educators, Atlanta, Georgia, October 10, 1974.
- . "Interpreting the Sky," Horace M. Albright Training Center, Grand Canyon, Arizona, October 19, 1974.
- . "Beholders and Expounders of the Sky." Armand N. Spitz Lecture, Annual Meeting of the Great Lakes Planetarium Association, Terre Haute, Indiana, October 25, 1974.
- . "The Sky as an Interpretive Resource." Interpreters Institute, Texas A and M University, November 18, 1974.
- . "The Stars in Our Lives." NASM Holiday Lecture Series, Washington, D. C., December 26, 1974.
- . "Man: Beholder and Expounder of Heaven." Keynote address, Astronomy Workshop, Alexandria, Virginia, January 25, 1975.
- . "Man Beholds The Sky." Fourteenth Annual Meeting of the Association of Interpretative Naturalists, April 9, 1975.
- . "Introduction To Sky Interpretation." Seminars presented at the following National Park Service locations:
Chaco Canyon National Monument, August 12, 1974
*Canyon de Chelly National Monument, August 13, 1974
*Navajo National Monument, August 14, 1974
*Canyonlands/Arches National Park, August 15-16, 1974
Everglades National Park, December 16, 1974
Rock Creek Park, Washington, D. C., March 12, 1975
Gateway National Recreation Area, May 20, 1975
*Cape Hatteras National Seashore, May 24, 1975
*Shenandoah National Park, June 7, 1975
Cape Cod National Seashore, June 10, 1975
*Assateague Island National Seashore, June 26, 1975
- Garber, Paul E. "The International History of Flight." (To a group of aviation cadets from thirty-six nations) Washington, D.C., August 5, 1974.
- . "The Role of Kites in the Development of the Airplane." Goddard Space Flight Center, Greenbelt, Maryland, December 9, 1974.
- Knight, Eugene M. "The New National Air and Space Museum."
———. "Lets Go Tours." Montgomery County Public Schools Adult Education, Silver Spring, Maryland, March 6, 1975.
- . Mens Club, Calvary Methodist Church, Arlington Virginia, April 23, 1975.
- Lopez, Donald S. (Principal speaker) Winter Formal Banquet of the Order of

- Daedalians, Bolling Air Force Base, Washington, D.C., December 4, 1974.
- . (Principal speaker) Teterboro Aviation Hall of Fame Dedication Banquet, Teterboro, New Jersey, April 30, 1975.
- Winter, Frank H., "Origins and Development of the Rocket in India." 14th Congress of the History of Science, Tokyo, Japan, August 1974.
- Zisfein, M. B. "The National Air and Space Museum." History Teachers Association of Maryland, Baltimore, Maryland, October 1974.
- . "The National Air and Space Museum." Museum of History and Technology Curators' Association, Washington, D. C., March 1975.
- . "Life in the Universe." American Institute of Aeronautics and Astronautics/Blue Ridge Section, Blacksburg, Virginia, April 1975.
- . "Life in the Universe." Explorers Club Annual Dinner, Washington, D. C., March 1975.
- . "A National Air and Space Museum Progress Report." American Institute of Aeronautics and Astronautics/National Capital Section, Washington, D. C., May 1975.

NATIONAL MUSEUM OF NATURAL HISTORY

Department of Anthropology

LECTURES, SEMINARS, PAPERS

- Angel, J. Lawrence. Medical-Legal Workshop at Winchester Memorial Hospital, Winchester, Virginia, October 17, 1974.
- . Annual Course in Forensic Pathology, Armed Forces Institute of Pathology, Washington, D.C., November 11, 1974.
- . Seminar in Forensic Osteology, National Museum of Natural History, Washington, D.C., December 2-13, 1974.
- . AAPA Annual Meetings, Denver, Colorado, April 10-12, 1975. Paper on Middle-class Skeletal Differences.
- Evans, Clifford. (Organized two symposia based upon Smithsonian-sponsored research programs in which Research Associate Meggers and Curator Clifford Evans were involved.) XLI International Congress of Americanists, Mexico City, September 2-7, 1974.
- Ewers, John C. "Indian Views of the White Man Prior to 1850: An Interpretation." *Viewpoints in Indian History*, Colorado State College, Fort Collins, Colorado, August 1974.
- Fitzhugh, William W. "Ice Age Mammals and the Emergence of Man." Radio Smithsonian, October 1974.
- . "Prehistoric Burial Traditions in Northeastern North America." Northern Virginia Archeological Society.
- . "Museum Anthropology." Bryn Mawr College field trip to Washington, April 1975.
- . "Pre-Columbian European Contacts in the Northwestern Atlantic." Washington Philosophical Society.
- . "Curatorial Responsibilities." George Washington University course in Museum Studies, February 1975.
- . "Arctic Archeology and Anthropology." School of Arts and Sciences, Berkeley, California, April 1975.
- Gibson, Gordon. (Informal discussion meetings with groups of students.) Hall of the Cultures of Africa, National Museum of Natural History, Washington, D.C.
- . (Illustrated lecture on the Himba of Angola) Baird Auditorium, National Museum of Natural History, Washington, D.C., May 7, 1975.
- Knez, Eugene I. (Guided lecture tour for docents through the permanent Asian exhibits of the National Museum of Natural History)

- , Chairman. (Session for traditional culture of Sindhi people) in "Sind Through the Centuries," International Seminar, Karachi, Pakistan.
- , Interlocutor. (Seminar for the control of national resources) Industrial College for the Armed Forces, Fort McNair.
- Laughlin, Robert M. "El lenguaje como vehículo a la cultura." First seminar of the Instituto de Asesoría Antropológica para la Región Maya, A.C., San Cristóbal las Casas, November 18–21, 1974.
- . "¿Por qué no?" Harvard Chiapas symposium "La civilización indígena de Chiapas en el mundo contemporáneo," in commemoration of the 500th anniversary of the birth of Fray Bartolomé de las Casas, San Cristóbal las Casas, August 19–21, 1974.
- , commentator. "Myth, Ritual, and Symbolism in the Chiapas Highlands: Reports on Recent Field Research of the Harvard Chiapas Project." 8th Special Session, History and Ethnohistory, Mexico City, XLI International Congress of Americanists, September 2–7, 1974.
- , moderator. "La civilización indígena de Chiapas en el mundo contemporáneo," Harvard Chiapas symposium in commemoration of the 500th anniversary of the birth of Fray Bartolomé de las Casas, San Cristóbal las Casas, August 19–21, 1974.
- Ortner, Donald J. (Paper on differentiation between diseases based on differences in the nature of lesions seen in Museum specimens.) Annual meeting of the American Association of Physical Anthropologists, April 1975.
- Riesenberg, Saul. "Ponapean Kinship." American Anthropological Association Meeting, Mexico City, November 20–24, 1974; and Association for Social Anthropology Meeting, Stuart, Florida, March 26–30, 1975.
- , session chairman. Association for Social Anthropology, Stuart, Florida, March 26–30, 1975.
- . Conducted tour of the Pacific Hall, National Museum of Natural History, Smithsonian Associates.
- St. Hoyme, Lucille E. Talks to groups of Docents, school classes, and other groups visiting the laboratory.
- . Introductory Physical Anthropology Course for graduate Orthodontic students, Georgetown University Dental School.
- . "The Human Skeleton." Classes for the Smithsonian Associates.
- . Lectures, Northern Virginia Dental Society.
- , co-ordinator. Series of 10 lectures on physical anthropology for Smithsonian Associates, January–March 1975.
- Stanford, Dennis. "A Paleo-Indian Site of the High Plains of Eastern Colorado, U.S." XLI Congreso Internacional de Americanistas, September 1974.
- . "The Jones-Miller Site, Yuma Co., Colorado." Denver Archeological Society, September 1974.
- . "The Jones-Miller Site: An Example of Hell Gap Bison Hunting and Processing Strategies." Plains Conference, November 1974.
- . "The Jones-Miller Hell Gap Site." Maryland Archeological Society, April 1975.
- Stanford, Dennis J., and John Albanese. "El Reparto Site, Tegucigalpa, Honduras: Preliminary Geological and Archeological Report." (Ms. on file) *Instituto Nacional de Antropología e Historia de Honduras, Tegucigalpa*. 1975.
- Sturtevant, William C. "Museums Acquisition Policies." Council for Museum Anthropology, American Anthropological Association annual meetings, Mexico City, November 21, 1974.
- Trousdale, William. Lecture on the work of the Helmand-Sistan Project at Harvard University, April 1975.
- , Maude I. Kerns Distinguished Visiting Professor of Oriental Art.

- Seminar on the Islamic architecture of East Iran, Soviet Central Asia, and Afghanistan. University of Oregon, Eugene, Oregon, May 1975.
- . Lecture on the results of the University of Michigan-Harvard University excavations at Qasr al-Hayr al-Sharqi (Syria) 1964–1971, of which he was Assistant Director. Oregon, May 1975.
- . Lecture on recent archaeological and other scientific discoveries in Afghanistan. Oregon, May 1975.
- Ubelaker, Douglas H. "Prehistoric Demography on the Coast of Ecuador." Universidad Catolica, Guayaquil, Ecuador, July 1974.
- . "Current Research on the Prehistoric Demography of Coastal Ecuador" and "Microscopic Methods of Determining Age at Death in Human Skeletons." XLI Congreso Internacional de Americanistas, Mexico City, September 1974.
- . "Archeological Inferences from Human Skeletal Remains." Virgin Islands Archeological Society, St. Thomas, US Virgin Islands, November 1974.
- . "The Significance of Human Skeletons, Recently Recovered from St. Thomas." Rotary Club, St. Thomas, US Virgin Islands.
- . "Human Skeletons in Archeological Research." St. Croix Archeological Society, St. Croix, US Virgin Islands, November 1974.
- . "Prehistoric Demography: Techniques and Problems." Department of Anthropology, University of Tennessee, Knoxville, November 1974.
- . "New World Prehistoric Demography." Smithsonian Associates, Washington, D.C., December 1974.
- . "Prehistoric Population and Demography: An Appraisal." Department of Anthropology, University of North Carolina, Chapel Hill, March 1975.
- . "Current Research on the Coast of Ecuador." Northern Virginia Archeological Society, Falls Church, Virginia, May 1975.
- Van Beek, Gus. "The Origin and Development of Near Eastern Architecture," (course of ten lectures) Smithsonian Associates, winter term, 1975.
- . Seminar on Archaeological Methodology at Tell Jemmeh. Smithsonian Associates, December 1974.
- . Paper on Tell Jemmeh. Annual Meeting of the Archaeological Institute of America, Chicago, late 1974.
- . Lecture on Tell Jemmeh. Senate of Scientists, National Museum of Natural History, February 1975.

Department of Botany

SEMINARS AND LECTURES

- Ayenu, Edward S. "Plant and Animal Relations in West Africa—with Special Reference to Plants and Fruit Bats." Oxford University, October 1974.
- . "Biology of Orchids." Oxford University, November 1974.
- . "Ten Percent of Our Plant Species May Not Survive." International Leadership Seminar, Smithsonian Institution, April 1975.
- . "The Endangered Plant Species Program at the Smithsonian." Annual Conference of the Garden Clubs of America, The National Arboretum, Washington, D. C., April 1975.
- Eyde, Richard H. "Foibles, Fallacies, and Famous Figures in Floral Morphology." Naturalists' Forum, Philadelphia Academy of Natural Sciences, December 1974; and Philadelphia Botanical Club, February 1975.
- Fosberg, F. R. "Geography, Ecology and Bio-geography." "Presidents Program," American Association of Geographers, New York, April 1975.
- Nowicke, Joan W. "Pollen Morphology as a Tool in Plant Classification." Lebanon Valley College, Annville, Pennsylvania, February 1975.
- . "Pollen Morphology as a Tool in Higher Order Systematics." Uni-

- versity of Maryland, and Botanical Society of Washington, D. C., March 1975.
- . "Pollen studies in the Centrospermae." Missouri Botanical Garden, St. Louis, March 1975.
- Read, Robert W. "Spring Flower Botany," ten-week course. Smithsonian Associates, spring 1975.
- . "Current Research on Bromeliads at the Smithsonian." Sacramento Bromeliad group, California, June 1975.
- Shetler, Stanwyn G. "Summer Botany: Summer Wildflowers," four field sessions. Smithsonian Associates, August 1974.
- . "A General Overview of the Flora of the United States," seminar on "Eastern Hardwood Forest" for interpretive personnel of the National Capital Parks, October 1974.
- . "Greenspace." Jaycees of Sugarland Run Community, Sterling, Virginia, October 1974.
- . "The Flora North America Generalized System for Describing the Morphology of Organisms." Museum Data Bank Committee, Margaret Woodbury Strong Museum, Rochester, N.Y., November 1974.
- . "Plant Exploration in Alaska," free film and lecture series. Baird Auditorium, National Museum of Natural History, March 1975.
- . "Pawpaws and Pitcher-Plants: The Pageant of Spring Wildflowers in the Potomac Valley." The Cornell Club of Washington, D.C., April 1975.
- . "The Landscape in the Ecosystem." guest lecture in course "Introduction to Landscape Architecture." Continuing Education for Women Center, George Washington University, Washington, D.C., May 1975.
- . "Gardening for Wildlife." Sugarland Run Garden Club, Sterling, Virginia, May 1975.
- . "Pawpaws and Pitcher-Plants: The Pageant of Spring Wildflowers in the Potomac Valley." Rose Hill Garden Club, Alexandria, Virginia, May 1975.
- . "Careers in Botany," Class for high school students. Smithsonian Associates, May 1975,
- Simpson, Beryl B. "Desert Scrub Flowers as a Faunal Resource." American Institute of Biological Sciences meeting, Tempe, Arizona, August 1974.
- . "Breeding Syndromes of Desert Scrub Perennials." University of Maryland, November 1974.
- . "Convergence of Breeding Systems of Warm Desert Plants." University of Massachusetts, December 1975, and University of Georgia, January 1975.
- Skog, Laurence E. "Angiosperm Evolution" [in response to animal pollinators.] Plant Morphology Class, George Mason University, Fairfax, Virginia, May 1975.
- Stern, William L. "The Bond Between Botany and Medicine" (Belk Award recipient lecture for 1974). Miami University, Ohio, October 1974; and to Members of the Pacific Tropical Botanic Garden, Honolulu, March 1975.
- Tangerini, Alice. "Half-tone and Line Techniques on Nylar" and "Methods of Construction from Herbarium Specimens." "Nuplementation '74," a combined meeting of the Guild of Natural Science Illustrators and the Association of Medical Illustrators, New Orleans, October 1974; and Guild of Natural Science Illustrators of Washington, D. C., November 1975.
- Wurdack, John J. "Endangered and Threatened Plant Species of the United States." American Rock Garden Society in White Plains, New York, January 1975.
- . "South American Plant Geography and Ecology," Science Division Colloquium, St. Mary's College of Maryland, April 1975.
- Botany Seminars, 1974-1975, in which various members of the Department of Botany participated:

- October 2, 1974. "Relationships in Madagascar Bignoniaceae." Dr. Alwyn H. Gentry, Missouri Botanical Garden, Saint Louis.
- October 7, 1974. "Field Observations on Bromeliaceae and other Succulents." Professor Werner Rauh, University of Heidelberg, Germany.
- December 16, 1974. "Remote Sensing of Vegetation for Environmental Management." Charles A. Dorigan, Biogeographer and Staff Scientist, Earth Satellite Corporation, Washington, D. C.
- February 10, 1975. "Biosystematic Studies in the Basidiomycete Genus *Pholiota*." Ellen Farr, Bibliographer, Index Nominum Genericorum, Smithsonian Institution, Washington, D. C.
- March 19, 1975. "Dynamics of Epiphyte Populations in Western Oregon." Dr. Lawrence H. Pike, Assistant Professor of Biology, George Mason University, Fairfax, Virginia.
- April 15, 1975. "Are There Vascular Plants Older Than Late Silurian (Pridolian)?" Dr. Harlan P. Banks, Professor of Botany, Cornell University, Ithaca, New York.
- May 7, 1975. "Contemplating Coca." Dr. James A. Duke, Supervisory Botanist and Chief, Plant Taxonomy Laboratory, Plant Genetics and Germplasm Institute, U.S.D.A., Beltsville, Maryland.
- May 14, 1975. "Botany in Malaysia." Dr. Benjamin C. Stone, Department of Botany, University of Malaya, Kuala Lumpur, Malaysia.
- May 21, 1975. "Variations in Types of Branching in the Palms." Dr. Jack B. Fisher, Plant Morphologist, Fairchild Tropical Garden, Miami, Florida.
- June 3, 1975. "Meristems, Mobilities and Ecological Strategies." Dr. P. B. Tomlinson, Professor of Botany, Maria Moors Cabot Foundation for Botanical Research of Harvard University at Harvard Forest, Petersham, Massachusetts.

Department of Entomology

LECTURES AND SEMINARS

- Erwin, Terry L. "The Role of Ground Beetles in the Tropical Arboreal Ecosystem." Thomas Hunt School of Biology, University of Kentucky, Lexington, spring 1973.
- . "The Role of Women in Biological Sciences." National Cathedral School for Girls, Washington, D. C., spring 1973.
- . "The Role of Carabid Beetles in the Arboreal Ecosystem in Middle America." California Academy of Sciences, San Francisco, December 20, 1974.
- . "The Role of Arboreal Ground Beetles in the Tropical Ecosystem." University of Florida, January 8, 1975.
- . "The Role of Ground Beetles in the Tropical Arboreal Ecosystem." University of Arkansas, December 9, 1974.
- . "Where Have All the Ground Beetles Gone? or The Phenomenon of Checkerboard Distribution in Tropical Lowland Forests." Senate of Scientists Sherry Seminar, National Museum of Natural History, Washington, D. C., April 30, 1975.
- . "The Role of NMNH in Smithsonian Science." First Smithsonian Inter-Science Conference, February 6-8, 1975.
- . "The Need for Monitoring and Long Range Planning of Personnel Resources in Systematic Biology." Panel discussion, 4th Annual Meeting of Association of Systematics Collections, Ithaca, New York, May 10, 1975.
- , Leader "Beginning Hennig—A Workshop Dealing with the Fundamentals of Hennigian Systematics Principles," informal workshop series. Department of Invertebrate Zoology and Entomology, United States Department of Agriculture, fall 1974.
- Flint, Oliver S., Jr. "Studies on Neotropical Trichoptera: A Preliminary Report."

- First International Symposium on Trichoptera, Lunz am See, Austria, September 16, 1974.
- . "A Survey of the Caddisflies of Argentina." Entomological Society of Washington, November 7, 1974.
- . "Habitats of the Andes from Chile to the Antarctic Circle." University of Maryland, College Park, Maryland, January 22, 1975.
- Hurd, Paul D., Jr. (Lecture) "Users of Taxonomic Research and Services: The National Plan for Systematics Resources in Entomology and its Meaning to the User Community," Symposium, Entomological Society of America Eastern Branch Meeting, Hershey, Pennsylvania, September 25, 1974.
- . (Lecture) "Systematics Resources in Entomology," Symposium, Entomological Society of America, Annual Meeting, Minneapolis, Minnesota, December 4, 1974.
- Sirivanakarn, Sunthorn. "The Systematics of *Culex vishnui* Complex in South-east Asia." Annual Meeting, American Mosquito Control Association, March 13, 1975.
- Ward, Ronald A. "The Medical Entomology Project at the Smithsonian Institution." Biology Seminar, Notre Dame University, August 7, 1974.
- . "African Trypanosomiasis," Taped lecture. Entomological Society of America and Brigham Young University, 1974.

Department of Invertebrate Zoology

LECTURES AND SEMINARS

- Barnard, J. L. "Evolution in Tropical Amphipoda." Symposium on Coral Reefs, Palau and Guam, July 1974.
- . "Evolution in Amphipoda," public lecture. University of Arizona, Tucson, 1974.
- . "Evolution in Amphipoda." Symposium honoring John S. Garth, Southern California Academy of Sciences, Los Angeles, May 1975.
- Bowman, T. E. "Discovery of the First Alaskan Water-Slater and Its Zoogeographical Implications." Department of Invertebrate Zoology seminar series, 1975.
- . "Marine plankton." Smithsonian Associates course in marine biology, April 1975.
- Cressey, R. F. "Marine Biology—Past, Present and Future," course of lectures. Smithsonian Associates, January to April, 1975.
- Hope, W. D. "Marine Nematology—Past, Present and Future." Annual meeting of Society of Nematologists, Riverside, California, August, 1974.
- Jones, M. L. "The Invertebrates Fauna of the Locks of the Panama Canal." Association of Island Marine Laboratories of the Caribbean, St. Croix, Virgin Islands, May, 1975.
- Pawson, D. L. "Echinoderms of Oceanic Islands." University of Western Australia, Perth, Western Australia, July 1974.
- . "Oceanic Islands, Dispersal Mechanisms and Endemism; Studies on Echinoderms of Bermuda and Ascension Islands." University of North Carolina, Chapel Hill, February 1975.
- . "Life in the Deep Sea." Smithsonian Associates course in marine biology. February 1975.
- . "Oceanic Islands, Dispersal Mechanisms and Endemism." Fort Pierce Bureau, Smithsonian Institution, March 1975.
- . "Swimming Sea Cucumbers." Department of Invertebrate Zoology seminar series, May 1975.
- . "Echinoderms." Smithsonian Associates course in marine biology. June 1975.

- Rice, M. E. "Some Aspects of Metamorphosis and Larval Development of the Sipuncula." American Society of Zoologists, annual meeting, December 1974.
- Roper, C. F. E. "Introduction to the Biology of the Cephalopoda," two lectures. Smithsonian Associates Adult Science Class, July 1974.
- . "The Shell in Cephalopod Phylogeny." American Malacological Union, Springfield, Massachusetts, August 1974.
- . "Catches of Cephalopods by Various Midwater Trawls." Workshop on problems of assessing populations of nekton, Santa Barbara, California, February 1975.
- . "A Survey of the Biology and Diversity of Cephalopods." Smithsonian Associates Adult Science Class, Marine Life, May 1975.
- . "Studies of Cephalopod Radulae." American Malacological Union Annual Meeting, San Diego, California, June 1975.
- . "The Distribution of the Epipelagic Octopod *Ocythoe tuberculata* Rafinesque." American Malacological Union Annual Meeting, San Diego, California, June 1975.
- Rosewater, J. "The Natural History and Classification of Mollusks," two lectures. Smithsonian Associates course on mollusks. July 1974.
- . "Mollusks of Gatun Locks, Panama Canal." American Malacological Union Annual Meeting, Springfield, Massachusetts, August 1974.
- . "An Expedition to the Moluccas Islands, Indonesia." National Capital Shell Club, February 1975.
- . "Panamanian Mollusks." Department of Invertebrate Zoology seminar series, May 1975.
- . "William Healey Dall—the Legacy He Left for Malacology." American Malacological Union Annual Meeting, San Diego, California. June 1975.
- . "Some Results of the National Museum of Natural History—Smithsonian Research Institute Survey of Panama, 1971–1975." American Malacological Union Annual Meeting, San Diego, California, June 1975.
- Ruetzler, K. "Smithsonian Studies of Coral Reefs." International Leadership Seminars, National Museum of Natural History, Foreign Student Service Council, Washington, D.C., April 1975.
- Williams, A. B. "Biological Research at the Smithsonian Institution, with Special Remarks on Crustacean Studies." McPherson College, Biology class, February 1975.
- . "Swimming Crabs of the Genus *Callinectes*." Woods Hole Oceanographic Institution, noon seminar, April 1975.
- . "Systematic Studies on the Genus *Callinectes*." Chesapeake Biological Laboratories, Solomons, Maryland, June 1975.

Department of Mineral Sciences

LECTURES AND SEMINARS

- Appleman, Daniel E. "X-Ray Crystallography and Polyttypism of Naturally Occurring Tridymite, SiO_2 ," lecture. American Crystallographic Association Annual Meeting, Penn State, August 1974.
- . "The Crystal Structures of Synthetic Lautarite, $\text{Ca}(\text{IO}_3)_2$, Bruggerite, $\text{Ca}(\text{IO}_3)_2 \cdot \text{H}_2\text{O}$ and $\text{Ca}(\text{IO}_3)_2 \cdot 6\text{H}_2\text{O}$," lecture. American Crystallographic Association Annual Meeting, Penn State, August 1974.
- . "Crystal Structure Research," seminar. Smithsonian Front Royal Conference.
- Banks, Harold H., Jr. "Rocks and Their Stories," lecture. Cresthaven Elementary School, Silver Spring, Maryland, September, 1974.
- . "Rocks and Their Stories," 5 Class lectures. Chevy Chase Elementary School, Chevy Chase, Maryland, October, 1974.
- Clarke, Roy S. Jr. "The Allende Mexico Meteorite Shower," lecture. Philadel-

- phia Mineralogical Society, Academy of Natural Sciences, Philadelphia, December 5, 1974.
- Desautels, Paul E. Two lectures. California Federation of Gem and Mineral Societies, San Mateo, California, July 1974.
- . Two lectures. Northwest Federation of Gem and Mineral Societies, Forest Grove, Oregon, August 1974.
- . Three lectures. Smithsonian Associates, University of Houston, Texas, January 1975.
- . Lecture. Pacific Micromount Conference, Santa Monica, California, February 1975.
- . Two lectures. Tucson Gem and Mineral Society Annual Meeting, Tucson, Arizona, February 1975.
- . Two lectures. Boston Mineral Society, Boston, Massachusetts, March 1975.
- . Two lectures. Second Annual Mineral Conference, Rochester Academy of Sciences, Rochester, New York, April 1975.
- . Banquet Address. Baltimore Mineral Society Annual Banquet, Sparrow's Point, Maryland, June 1975.
- . Two lectures. Denver Council of Gem and Mineral Societies, Annual Meeting, Denver, Colorado, June 1975.
- . Two lectures. Gem and Mineral Show, Spruce Pine, North Carolina, July 1975.
- . Lecture. Honolulu Gem and Mineral Society, Honolulu, Hawaii, June 1975.
- Dunn, Pete J. "Precautions in Gemstone Purchasing," lecture. General's Wives Association, Fort Myer, Virginia, July 1974.
- . "New Acquisitions at the Smithsonian Institution," lecture. Capitol Mineral Club, Concord, New Hampshire, October 1974.
- . "On Royal Jewelry," lecture. Northshore Rock and Mineral Club of Massachusetts, October 1974.
- . "On Gems and Gem Materials," lecture. Nashoba Valley Mineral Society of Massachusetts, October 1974.
- . "On Gems and Jewelry Design," lecture. Rossmoor Women's Club, Wheaton, Maryland, January 1975.
- . "The Role of Gems and Jewelry," lecture. Annual Meeting of Sigma Chi, Wilmington, Delaware, February 1975.
- . "On Royal Jewelry," lecture. Baltimore Mineral Society, Baltimore, Maryland, February 1975.
- . "On Recent Acquisitions at the Smithsonian," lecture. Frederick County Mineral Club, Maryland, March 1975.
- . "On Factors in the Choice of Fine Jewelry," lecture. The College Club of Harrisburg, Pennsylvania, May 1975.
- . "On Mineral Specimen Classics," lecture. The New England Gem and Mineral Show, Topsfield, Massachusetts, June 1975.
- . "New England Gem Materials," lecture. The Eastern Federation of Gem and Mineral Societies, Annual Meeting, Portland, Maine, June 1975.
- . Four lectures on Gemstones. Michigan Geology and Gemcraft Society, Ann Arbor, Michigan, April 1975.
- Fredriksson, Kurt "Petrology and Origin of Chondrites," lecture. Bonn University, Germany, November 1974.
- . "Chondrite Petrology and Some Terrestrial and Lunar Analogues," lecture. Oxford University, England, February 1975.
- . "Chondrite Petrology and Some Terrestrial and Lunar Analogues," lecture. Manchester University, England, February 1975.
- . "Chondrite Petrology and Some Terrestrial and Lunar Analogues," lecture. St. Andrews University, Scotland, February 1975.

- . "Chemical and Petrological Effects of Hypervelocity Impacts," lecture. Max Planck Institute, Mainz, Germany, May 1975.
- . "The Bhole Stone—A Trus Polymict Breccia?" presented paper. Meteoritical Society Meeting, Los Angeles, August 1974.
- Fudali, Robert F. "Meteorite Impact Cratering is a Random Process—Or is it? Some Examples from Northern Africa," lecture. Geological Society of Washington, April 1975.
- Jarosewich, Eugene, A. F. Noonan, and A. DeGasparis. "The Isna Meteorite—A C3 Find from Egypt," presented paper. 37th Annual Meeting of the Meteoritical Society, UCLA, July 1974.
- Jarosewich, Eugene, and R. T. Dodd. "H Group Xenolith in St. Mesmin Meteorite," presented paper. 37th Annual Meeting of the Meteoritical Society, UCLA, July 1974.
- Jarosewich, Eugene and C. Obermeyer and J. Nelen. "Simultaneous Microprobe Analysis of Silicates for Nine Elements Using Wavelength Dispersive System," presented paper. Microprobe Society Meetings, Ottawa, Canada, July 1974.
- Jarosewich, Eugene, R. H. Gibbs, Jr., and H. L. Windom. "Heavy Metal Concentration in Museum Fish Specimens: Effects of Preservation and Time," presented paper. National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina, August 1974.
- Mason, Brian H. "The Allende Meteorite—Cosmochemistry's Rosetta Stone?" lecture. Chemistry Department, University of Virginia, Charlottesville, Virginia, February 1975.
- . "The Allende Meteorite—Cosmochemistry's Rosetta Stone?" lecture. National Museum of Natural History Lecture Series, March 1975.
- Melson, William G. "Petrology of Oceanic Crust," series of three lectures. Lamont-Doherty Geological Observatory, Palisades, New York, October 1974.
- . "Petrology of the Juan de Fuca Ridge Spreading Center," lecture. Scripps Institution of Oceanography, September 1974.
- . "Petrology of the Juan de Fuca Ridge Spreading Center," lecture. California Institute of Technology, September 1974.
- . "Scientific Returns of the Deep Sea Drilling Project," lecture. Smithsonian Senate of Scientists Dinner Forum, February 1974.
- . "Scientific Returns of the Deep Sea Drilling Project," lecture. National Museum of Natural History. Public Lecture Series, January 1975.
- . "Results of Basement Drilling on the Mid-Atlantic Ridge," lecture. Geological Society of Washington, October 1974.
- . "Results of Basement Drilling on the Mid-Atlantic Ridge," lecture. Scripps Institution of Oceanography, La Jolla, California, December 1974.
- . "Results of Basement Drilling on the Mid-Atlantic Ridge," lecture. Geological Society of America Meetings, Miami, September 1974.
- . "Results of Basement Drilling on the Mid-Atlantic Ridge," lecture. Geology Department, Harvard University, Cambridge, Massachusetts, December 1974.
- . "Results of Basement Drilling on the Mid-Atlantic Ridge," lecture. State University of New York at Stony Brook, Stony Brook, New York November 1974.
- . "Results of Basement Drilling on the Mid-Atlantic Ridge," lecture. Woods Hole Oceanographic Institution, Woods Hole, Massachusetts, November 1974.
- . "Results of Basement Drilling on the Mid-Atlantic Ridge," lecture. Graduate School of Oceanography, University of Rhode Island, Kingston, November 1974.

- . "Continents in Motion," series of ten lectures. Smithsonian Associates, Spring 1975.
- Simkin, Thomas. "Glacial Geology and the Ice Ages—Hall 6," lecture. Smithsonian Institution Docents, September 1974.
- . "Man and Biosphere Conference," conference. Roland Center, Virginia, October 1974.
- . "Oceanic Volcanism," lecture and two films. National Museum of Natural History Public Lecture Series, December 1974.
- . "Galapagos Islands Volcanism," lecture. National Museum of Natural History Public Lecture Series, January 1975.
- . "Galapagos Islands Volcanism," lecture. Princeton University, Princeton, New Jersey, February 1975.
- . "Physical Geology—Hall 20," Smithsonian Institution Docents, March 1975.
- White, John S., Jr. "Mineral Names," lecture. The Greater Detroit International Gem and Mineral Show, Detroit, Michigan, October 1974.
- . "An Insight into Editing a Mineral Magazine," lecture. Baltimore Mineral Society, Baltimore, Maryland, November 1974.
- . "Mineralogy," lecture. Kiwanis Club, Hilo, Hawaii, January 1975.
- . "The Mineral and Gem Collections of the Smithsonian," lecture. Polynesian Gem Collection of Honolulu, Honolulu, Hawaii, February 1975.
- . "Visiting Some Contemporary Mineral Localities," lecture. Cincinnati Mineral Society Annual Show, Cincinnati, Ohio, April 1975.
- . "The Minerals of Mexico," lecture. National Gem and Mineral Show, Denver, Colorado, June 1975.

Department of Vertebrate Zoology

LECTURES

- Ash, John S. "Autumn Migration in Eastern Ethiopia," 16th International Ornithological Congress, Canberra, Australia, August 12–17, 1974.
- Divoky, George J., and George E. Watson. "The Pelagic and Near Shore Birds of the Beaufort and Chukchi Seas." International Symposium on Conservation of Marine Birds in Northern North America, Seattle, Washington, May 13–15, 1975.
- Olson, Storrs L. "New Fossil Evidence of the Origin of Frigatebirds." 16th International Ornithological Congress, Canberra, Australia, August 15, 1974.
- Watson, George E. "Studies and Control of Crop Damage by Wild Birds." Academy of Technical and Scientific Research, Egyptian Zoological Gardens, Gizah, Egypt, August 6, 1974.
- Watson, George E., George M. Jonkel, and F. Graham Cooch. "Dispersal and Migratory Movements." International Symposium on Conservation of Marine Birds in Northern North America, Seattle, Washington, May 13–15, 1975.
- Zug, George R. "Reptiles and Amphibians of New Guinea." Washington Herpetological Society, April 1975.

NATIONAL ZOOLOGICAL PARK

Office of Animal Management

LECTURES

- Egoscue, Harold. "Care & Management of the Utah Prairie Dog in Captivity." Seminar sponsored by National Capitol area branch of the American Association for Laboratory Animal Science, September 12, 1974.
- Marcellini, Dale. "Acoustic Behavior of Lizards." Symposium on the Behavior and Neurology of Lizards, Front Royal Conservation Center, May 1975.

- . "Some Aspects of the Thermal Ecology of *Hemidactylus frenatus*." American Society of Ichthyologists and Herpetologists meetings, June 1975.
- Roberts, Miles, and Larry Collins. "Arboreal Folivores in Captivity: Maintenance of a Delicate Minority." Arboreal Folivore Conference, Front Royal, Virginia.

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

LECTURES AND REPORTS

- Aksnes, K. "Properties of Satellite Orbits: Ephemerides, Dynamical Constants, and Satellite Phenomena." International Astronomical Union Colloquium No. 28, Planetary Satellites, Ithaca, New York, August 1974.
- . "Short-Period and Long-Period Perturbations of a Spherical Satellite due to Direct Solar Radiation." Dynamical Astronomy Division Meeting of the American Astronomical Society, Tampa, Florida, December 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 7 (1975), page 341.
- Aksnes, K., and F. A. Franklin. "Results of 1973 Occultations of Europa by Io." International Astronomical Union Colloquium No. 28, Planetary Satellites, Ithaca, New York, August 1974.
- Aksnes, K., and B. G. Marsden. "The Orbit of Jupiter XIII." Dynamical Astronomy Division Meeting of the American Astronomical Society, Tampa, Florida, December 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 7 (1975), page 342.
- Avrett, E. H. "Formation of the Solar EUV Spectrum." Solar Physics Division Meeting of the American Astronomical Society, Boulder, Colorado, January 1975. [Abstract] *Bulletin of the American Astronomical Society*, volume 7 (1975), page 360.
- Black, J. H. " $\lambda 9$ cm CH Emission in Comet Kohoutek (1973f)." National Aeronautics and Space Administration/Marshall Space Flight Center Comet Kohoutek Workshop, Huntsville, Alabama, June 1975.
- Cameron, A. G. W. "Formation of the Outer Planets and Satellites." The International Astronomical Union Colloquium number 28, Planetary Satellites, Ithaca, New York, August 1974.
- Cameron, A. G. W., and J. B. Pollack. "On the Origin of the Solar System and of Jupiter and Its Satellites." Jupiter Conference, Tucson, Arizona, May 1975.
- Chaffee, F. H. "Interstellar CH and CH* in Ophiuchus." Spring Meeting of the Astronomical Society of the Pacific, May 1975.
- . "Application of Electrography to Astronomical Spectroscopy." Spring Meeting of the Society of Photographic Scientists and Engineers, Cambridge, Massachusetts, June 1975.
- Chaisson, E. J. "On Nebular Non-Equilibrium Thermodynamics." 1974 United States National Committee/International Union of Radio Science Meeting, Boulder, Colorado, October 1974. [Abstract] *Program of Abstracts*, page 73.
- . "Microwave Observations of Rho Ophiuchi." 144th Meeting of the American Astronomical Society, Gainesville, Florida, December 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 6 (1974), page 436.
- Chaisson, E. J., and C. A. Beichman. "Magnetism in Dense Interstellar Clouds." 143rd Meeting of the American Astronomical Society, Rochester, New York, August 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 6 (1974), page 336.
- Chang, H. T., and M. D. Grossi. "Long Range ULF Propagation in the Earth Lithosphere." International Institute of Electrical and Electronics Engineers/American Physical Society Symposium and United States National Com-

- mittee/International Union of Radio Science Meeting, Urbana, Illinois, June 1975.
- Chase, R. C., L. Golub, A. Krieger, J. K. Silk, G. S. Vaiana, M. Zombeck, and A. F. Timothy. "Temperature and Density Measurements of Coronal Loops." Solar Physics Division Meeting of the American Astronomical Society, Boulder, Colorado, January 1975. [Abstract] *Bulletin of the American Astronomical Society*, volume 7 (1975), page 346.
- Chetin, T., C. J. Forman, and W. Liller. "Optical Characteristics of Candidate Stars for X-Ray Sources in the Large Magellanic Cloud." 143rd Meeting of the American Astronomical Society, Rochester, New York, August 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 6 (1974), page 304.
- Colombo, G., E. M. Gaposchkin, M. D. Grossi, and G. C. Weiffenbach. "Long-Tethered Satellites for the Shuttle Orbiter." International Conference on Technology of Scientific Space Experiments, Paris, France, May 1975.
- Cook, A. F., and F. A. Franklin. Saturn's Rings—A Survey." International Astronomical Union Colloquium number 28, Planetary Satellites, Ithaca, New York, August 1974.
- Dalgarno, A. "Model and Pseudopotential Calculations." Fourth International Conference on Atomic Physics, Heidelberg, Germany, July 1974.
- . "Fluorescence Processes in Molecular Hydrogen." Perspectives in Spectroscopy, a Symposium in honor of Dr. Gerhard Herzberg, Montreal, Canada, September 1974.
- . "Molecular Processes in Astrophysics." Summer Research Conference on Theoretical Chemistry, Boulder, Colorado, June 1975.
- Dickinson, D. F. "Water Vapor in Infrared Stars." 143rd Meeting of the American Astronomical Society, Rochester, New York, August 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 6 (1974), page 340.
- Docken, K. K. "Recent Theoretical Developments in Calculations of H_2 Photoionization." Division of Electron and Atomic Physics of the American Physical Society, Chicago, Illinois, December 1974.
- Dupree, A. K. "Ultraviolet Observations of Chromospheric Emission Lines in G Stars." 144th Meeting of the American Astronomical Society, Gainesville, Florida, December 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 6 (1974), page 446.
- . "Ultraviolet Observations of Capella from Copernicus." Solar Physics Division Meeting of the American Astronomical Society, Boulder, Colorado, January 1975. [Abstract] *Bulletin of the American Astronomical Society*, volume 7 (1975), page 359.
- Dupree, A. K., and P. V. Foukal. "Plasma Diagnostics from Solar EUV Spectra." International Astronomical Union Colloquium number 27, UV and X-Ray Spectroscopy of Astrophysical and Laboratory Plasmas, Cambridge, Massachusetts, September 1974.
- Dupree, A. K., P. V. Foukal, M. C. E. Huber, R. W. Noyes, E. M. Reeves, E. J. Schmahl, J. G. Timothy, J. E. Vernazza, and G. L. Withbroe. "Extreme Ultraviolet Solar Spectra from Skylab-Apollo Telescope Mount." 143rd Meeting of the American Astronomical Society, Rochester, New York, August 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 6 (1974), page 349.
- Epstein, R. "Production of the Light Elements in Supernovae." Presented at the High Energy Astrophysics Division Meeting of the American Astronomical Society, Gainesville, Florida, December 1974.
- Fazio, G. G., D. E. Kleinmann, R. W. Noyes, E. L. Wright, M. Zeilik II, and F. J. Low. "High Resolution Maps of the Orion Nebula Region and W3 at Far Infrared Wavelengths." 143rd Meeting of the American Astronomical Society, Rochester, New York, August 1974.

- Field, G. B. "Heating and Ionization of the Interstellar Medium: Star Formation." 1974 les Houches Summer School in Theoretical Physics, Paris, France.
- . "Hot Gas in and between Galaxies." International Astronomical Union Colloquium number 27, UV and X-Ray Spectroscopy of Astrophysical and Laboratory Plasmas, Cambridge, Massachusetts, September 1974.
- . "Heating of the Universe by Quasars." Symposium on the Early Evolution of the Universe, University of North Carolina, Chapel Hill, North Carolina, March 1975.
- Fireman, E. L., J. D'Amico, and J. DeFelice. "The Tritium Content of Solar Wind from Surveyor 3 Material." [Abstract] American Chemical Society Meeting, Atlantic City, New Jersey, September 1974.
- Foukal, P. V. "The Pressure Balance and Electric Currents of Active Region Loop Structures." High Altitude Observatory, Boulder, Colorado, December 1974.
- . "The Pressure Balance and Currents in Active Region Loop Structures." Solar Physics Division Meeting, American Astronomical Society, Boulder, Colorado, January 1975. [Abstract] *Bulletin of the American Astronomical Society*, volume 7 (1975), page 346.
- Frogel, J. A., S. E. Persson, M. Aaronson, E. E. Becklin, K. Matthews, and G. Neugebauer. "Stellar Content of Elliptical Galaxy Nuclei." 144th Meeting of the American Astronomical Society, Gainesville, Florida, December 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 6 (1974), page 441.
- Gaposchkin, E. M. "LAGEOS." 18th International COSPAR Meeting, Varna, Bulgaria, June 1975.
- Gaposchkin, E. M., J. Latimer, and G. Mendes. "Station Coordinates in the Standard Earth III System Derived by Using Camera Data from ISAGEX." INTERCOSMOS Symposium on Results of Satellite Observations, Budapest, Hungary, October 1974.
- Gerassimenko, M., J. M. Davis, R. C. Chase, A. S. Krieger, J. K. Silk, and G. S. Vaiana. "Simultaneous X-Ray Spectra and X-Ray Images of an Active Region." Presented at the Solar Physics Division Meeting of the American Astronomical Society, Boulder, Colorado, January 1975. [Abstract] *Bulletin of the American Astronomical Society*, volume 7 (1975), page 347.
- Giacconi, R. "Her X-1 and Cen X-3 Revisited." Seventh Texas Symposium on Relativistic Astrophysics, Dallas, Texas, December 1974.
- . "Progress in X-Ray Astronomy." Thirty-Fourth Richtmyer Memorial Lecture of the American Association of Physics Teachers, Anaheim, California, January 1975.
- Golub, L., A. Krieger, R. Simon, G. Vaiana, and A. F. Timothy. "Temporal and Spatial Properties of Coronal Bright Points." Solar Physics Division Meeting of the American Astronomical Society, Boulder, Colorado, January 1975. [Abstract] *Bulletin of the American Astronomical Society*, volume 7 (1975), page 350.
- Gorenstein, P., H. Helmken, and H. Gursky. "Localization of Gamma-Ray Bursts with Wide Field Multiple Pinhole Camera System in Near Earth Orbit." COSPAR/International Astronomical Union Symposium on Fast Transients in X- and Gamma-Rays, Varna, Bulgaria, May 1975.
- Grossi, M. D., editor. *Selected Papers on OV4-1 Satellite-to-Satellite Long-Range HF Propagation Experiment*. Report ER74-4372, Raytheon Company, Sudbury, Massachusetts, November 1974.
- . "Spacecraft-to-Spacecraft Ionospheric Measurements on Occasion of the Apollo-Soyuz Test Project (ASTP)." COSPAR Symposium on Beacon Satellite Investigations of the Ionosphere Structure and ATSF Data, Moscow, USSR, November 1974.

- Gursky, H., H. Schnopper, E. Schreier, and D. Parsignault. "Preliminary X-Ray Results from the Astronomical Netherlands Satellite (ANS)." 144th Meeting of the American Astronomical Society, Gainesville, Florida, December 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 6 (1974), page 444.
- Gursky, H., and E. Schreier. "The Binary X-Ray Stars—The Observational Picture." International Astronomical Union Symposium No. 67, Variables in Relation to the Evolution of Stars and Stellar Systems, Moscow, USSR, August 1974.
- Harvey, J. W., A. S. Krieger, J. M. Davis, A. F. Timothy, and G. S. Vaiana. "Comparison of Skylab X-Ray and Ground-Based Helium Observations." Solar Physics Division Meeting of the American Astronomical Society, Boulder, Colorado, January 1975. [Abstract] *Bulletin of the American Astronomical Society*, volume 7 (1975), page 358.
- Hoegy, W. R., H. G. Mayr, L. H. Brace, G. A. Victor, S. Robertson, and E. Fontheim. "Local and Non-Local Ionospheric Electron Heating." American Geophysical Union Spring Meeting, Washington, D. C., June 1975.
- Jacchia, L. G., J. W. Slowey, and U. von Zahn. "Latitudinal Changes of Composition in the Disturbed Thermosphere from ESRO 4 Measurements." 17th International COSPAR Meeting, Varna, Bulgaria, June 1975.
- Jordan, C. "The Intensities of Helium Lines in the Solar EUV Spectrum." International Astronomical Union Colloquium number 27, UV and X-Ray Spectroscopy of Astrophysical and Laboratory Plasmas, Cambridge, Massachusetts, September 1974.
- Kahler, S. W., A. S. Krieger, and G. S. Vaiana. "General Properties of Soft X-Ray Flare Images." Solar Physics Division Meeting of the American Astronomical Society, Boulder, Colorado, January 1975. [Abstract] *Bulletin of the Astronomical Society*, volume 7 (1975), page 355.
- Kalkofen, W., and P. Ulmschneider. "The Theoretical Temperature Minimum." Solar Physics Division Meeting of the American Astronomical Society, Boulder, Colorado, January 1975. [Abstract] *Bulletin of the American Astronomical Society*, volume 7 (1975), page 363.
- Kellogg, E. M. "X-Ray Astronomy in the *Uhuru* Epoch and Beyond." Newton Lacy Pierce Prize Lecture. 143rd Meeting of the American Astronomical Society, Rochester, New York, August 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 6 (1974), page 321.
- Kohl, J. "Rocket-Spectrometer Observations of the Center and Limb Spectra of the Sun." International Astronomical Union Colloquium number 27, UV and X-Ray Spectroscopy of Astrophysical and Laboratory Plasmas, Cambridge, Massachusetts, September 1974.
- Kohl, J. L., W. H. Parkinson, and E. M. Reeves. "Measurements of Solar Line Profiles Between 1175 and 3200 Å." Solar Physics Division of the American Astronomical Society Meeting, Boulder, Colorado, January 1975. [Abstract] *Bulletin of the Astronomical Society*, volume 7 (1975), page 360.
- Kojoian, G., D. Dickson, R. A. Sramek, and H. M. Tovmassian. "Flux Density Measurements of Markarian Objects at Centimeter Wavelengths." 143rd Meeting of the American Astronomical Society, Rochester, New York, August 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 6 (1974), page 342.
- Kozai, Y. "Hybrid Systems Used in Dynamics for Artificial Satellites." International Astronomical Union Colloquium number 26, Reference Coordinate Systems for Earth Dynamics, Torun, Poland, August 1974.
- Kurucz, R. L. "A Progress Report on Theoretical Four-Dimensional Photometry of F, A, and B Stars." Conference on Multicolor Photometry and the Theoretical HR Diagram, State University of New York at Albany, October 1974.

- Lada, C. J., T. R. Gull, C. A. Gottlieb, and E. W. Gottlieb. "Radio CO and Optical Ionization Structure of M8." 144th Meeting of the American Astronomical Society, Gainesville, Florida, December 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 6 (1974), page 426.
- . "Advances in Instrumentation for Stellar Photometry." Conference on Multicolor Photometry and the Theoretical H-R Diagram, Albany, New York, October 1974.
- Latham, D. W. "Conversion for Specular Density to ASA Diffuse Density." American Astronomical Society Working Group on Photographic Materials, Rochester, New York, August 1974.
- . "Inexpensive Computer Control of a Microphotometer." American Astronomical Society Working Group on Photographic Materials, Rochester, New York, August 1974.
- . "Recent Information on the DQE of Kodak Spectroscopic Plates." Topical Meeting on Imaging in Astronomy, Cambridge, Massachusetts, June 1975.
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- . "Implications of Recent Data for Theoretical Solar Physics." Solar Theoretical Workshop, Tucson, Arizona, October 1974.
- . "The Extreme Ultraviolet Spectrum of Sunspots." 144th Meeting of the American Astronomical Society, Gainesville, Florida, December 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 7 (1975), page 428.
- . "Extreme Ultraviolet Spectroscopy of the Sun's Atmosphere from Skylab." Meeting of the Society for Applied Spectroscopy, New England Section, Lexington, Massachusetts, January 1975.
- . "EUV Emission from Sunspots." Solar Physics Division Meeting, American Astronomical Society, Boulder, Colorado, January 1975.
- . "EUV and X-Ray Observations from Out-of-the-Ecliptic." Symposium on Scientific Goals and Objectives, National Aeronautics and Space Administration Office of Space Science, Columbia, Maryland, April 1975.
- . "The Solar Maximum Mission." Presented at the Symposium on the Study of the Sun and Interplanetary Medium in Three Dimensions, Greenbelt, Maryland, May 1975.
- Oppenheimer, M. "Gas Phase Chemistry in Comets." International Astronomical Union Colloquium number 25, Study of Comets, Greenbelt, Maryland, October 1974.
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- . "ATM Observations: UV Results." International Astronomical Union Colloquium number 27, UV and X-Ray Spectroscopy of Astrophysical and Laboratory Plasmas, Cambridge, Massachusetts, September 1974.
- . "Solar EUV Observations from the Harvard ATM Spectrometer." Royal Society British National Committee on Space Research Meeting, London, England, January 1975.
- . "A Review of the Harvard Results from Skylab." Special Colloquium Series on Skylab Experiments, University of Maryland, Baltimore, Maryland, March 1975.
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- Schnopper, H. W. "Radiative Electron Capture and Bremsstrahlung." International Conference on X-Ray Processes in Matter, Helsinki, Finland, July 1974.
- . "Radiative Electron Capture and Bremsstrahlung." Seminar of the FOM Institute for Atomic and Molecular Physics, Amsterdam, The Netherlands, November 1974.
- . "Laboratory Aspects of X-Ray Astronomy." Centre National de la Recherche Scientifique Colloquium, University of Paris, Orsay, France, November 1974.
- . "Radiative Electron Capture and Bremsstrahlung." Colloquium, Institute Marie and Pierre Curie, University of Paris, Paris, France, November 1974.
- . "The ANS Hard X-Ray Experiment." Netherlands Astronomical Association, Groningen, Holland, January 1975.
- Schreier, E. J. "The Binary X-Ray Sources." Seminar at the University of Amsterdam, The Netherlands, January 1975.
- Sekanina, Z. "Progress in Our Understanding of Cometary Dust Tails." International Astronomical Union Colloquium number 25, Study of Comets, Greenbelt, Maryland, October 1974.
- . "A Continuing Controversy: Has the Cometary Nucleus been Resolved?" International Astronomical Union Colloquium number 25, Study of Comets, Greenbelt, Maryland, October 1974.
- . "Modeling of Motions of Vaporizing Dust Particles in the Solar

- System." International Astronomical Union Colloquium number 31, Interplanetary Dust and Zodiacal Light, Heidelberg, Germany, June 1975.
- . "Predicted Favorable Visibility Conditions for Anomalous Tails of Comets." International Astronomical Union Colloquium number 31, Interplanetary Dust and Zodiacal Light, Heidelberg, Germany, June 1975.
- Silk, J. K., S. W. Kahler, A. S. Krieger, and G. S. Vaiana. "Time Changes in the Structure and Spectrum of an X-Ray Flare." Solar Physics Division Meeting, American Astronomical Society, Boulder, Colorado, January 1975. [Abstract] *Bulletin of the American Astronomical Society*, volume 7 (1975), page 355.
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- Tananbaum, H. D., and J. B. Hutchings. "Parameters of X-Ray Binaries." Seventh Texas Symposium on Relativistic Astrophysics, Dallas, Texas, December 1974.
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- . "Photon-Counting Detector Arrays Based on Micro-Channel Array Plates." International Conference on Image Processing Techniques in Astronomy, Utrecht, The Netherlands, March 1975.
- Timothy, J. G., and E. M. Reeves. "Preliminary Results from the Harvard ATM Calibration Rocket Program." American Institute of Aeronautics and Astronautics/American Geophysical Union Conference on the Scientific Experiments on Skylab, Huntsville, Alabama, October 1974.
- . "Measurements of the Absolute Solar Flux at Extreme Ultraviolet Wavelengths from the ATM and ATM Calibration Rocket Spectroheliometers." American Geophysical Union Winter Meeting, San Francisco, California, December 1974. [Abstract] *Transactions of the American Geophysical Union*, volume 56 (1974), page 1156.
- Traub, W. A. "Doppler Velocities in the Venus Atmosphere." Conference on the Atmosphere of Venus, Goddard Institute for Space Studies, New York, October 1974.
- Vaiana, G. S. "The X-Ray Corona from Skylab." Royal Society Meeting, The Physics of the Solar Atmosphere, London, January 1975.
- . "The Solar X-Ray Corona: New Insights from Skylab." Center for Astrophysics Colloquium, Cambridge, Massachusetts, April 1975.
- Vaiana, G. S., A. S. Krieger, A. F. Timothy, and M. Zombeck. "ATM Observations, X-Ray Results." International Astronomical Union Colloquium number 27, UV and X-Ray Spectroscopy of Astrophysical and Laboratory Plasmas, Cambridge, Massachusetts, September 1974.
- Vernazza, J. E. "Time Variations in the EUV Line Emission from the Chromosphere and Corona." Presented at the Solar Physics Division Meeting of the American Astronomical Society, Boulder, Colorado, January 1975. [Abstract] *Bulletin of the American Astronomical Society*, volume 7 (1975), page 365.
- Vessot, R. F. C. "Applications of Frequency Standards." Fifth International Conference on Atomic Masers and Related Constants, Paris, France, June 1975.
- Victor, G. A., and A. Dalgarno. "Theoretical Studies of Transition Probabilities." International Astronomical Union Colloquium number 27, UV and X-Ray Spectroscopy of Astrophysical and Laboratory Plasmas, Cambridge, Massachusetts, September 1974.

- Victor, G. A., A. Dalgarno, K. K. Docken, and M. Oppenheimer. "Solar Ultraviolet Intensities and Atmospheric Parameter." American Geophysical Union Winter Meeting, San Francisco, California, December 1974.
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- Walker, R. C., K. Y. Lo, B. F. Burke, J. M. Moran, and K. J. Johnston. "VLBI Observations of Cygnus A." 144th Meeting of the American Astronomical Society, Gainesville, Florida, December 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 6 (1974), page 461.
- Weinberg, S. "Problems in Gauge Field Theories." XVIIth International Conference in High Energy Nuclear Physics, London, England, July 1974.
- . "Astrophysical Implications of the New Theories of Weak Interactions." Seventh Texas Symposium on Relativistic Astrophysics, Dallas, Texas, December 1974.
- . "Developments in Gauge Theories." Eastern Theoretical Physics Conference, University of Pennsylvania, Philadelphia, Pennsylvania, March 1975.
- . "Astrophysics and Weak Interaction Theory." American Physical Society Meeting, Washington, D. C., April 1975.
- Whipple, F. L. "The Nucleus: Comments." International Astronomical Union Colloquium number 25, Study of Comets, Greenbelt, Maryland, October 1974.
- . "Do Comets Play a Role in Galactic Chemistry and γ -Ray Bursts?" Dynamical Astronomy Division Meeting, American Astronomical Society, Tampa, Florida, December 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 7 (1975), page 343.
- . "Minor Bodies and Satellites." American Geophysical Union/American Institute of Aeronautics and Astronautics Symposium on Planetary Exploration, San Francisco, California, December 1974.
- . "Do Comets Play a Role in Galactic Chemistry and γ -Ray Bursts?" Meeting of the National Aeronautics and Space Administration Planetary Program Principal Investigators Conference, Pasadena, California, March 1975.
- . "Comets and Solar Electric Propulsion." American Institute of Aeronautics and Astronautics, New Orleans, Louisiana, March 1975.
- Whipple, F. L., and M. Lecar. "Comet Formation Induced by the Solar Wind." International Astronomical Union Colloquium number 25, Study of Comets, Greenbelt, Maryland, October 1974.
- Willson, R. F., and E. J. Chaisson. "Radiofrequency Observations of the Trifid Nebula." 143rd Meeting of the American Astronomical Society, Rochester, New York, August 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 6 (1974), page 350.
- Withbroe, G. L. "Energy Balance in the Lower Corona. Implications with Regard to the Solar Wind and Coronal Heating." Solar Theoretical Workshop, Kitt Peak National Observatory, Tucson, Arizona, October 1974.
- . "EUV Spectroscopy with the Harvard Skylab Experiment." Annual Meeting of the Optical Society of America, Houston, Texas, October 1974.
- Withbroe, G. L., and D. T. Jaffe. "Polar Transients Observed in the EUV." Presented at the Solar Physics Division Meeting of the American Astronomical Society, Boulder, Colorado, January 1975. [Abstract] *Bulletin of the American Astronomical Society*, volume 7 (1975), page 354.
- Wood, J. A. "Origin of the Earth's Moon." International Astronomical Union Colloquium number 28, Planetary Satellites, Ithaca, New York, August 1974.
- Wright, F. W. "An Identification Atlas of the Small Magellanic Cloud." 144th

Meeting of the American Astronomical Society, Gainesville, Florida, December 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 6 (1974), page 462.

Zeilik, M. "Personal Experience with PSI." Earth Science Department Colloquium, University of Northern Iowa, Cedar Falls, Iowa, August 1974.

———. "Far Infrared Astronomy of H II Regions." University of New Mexico, Albuquerque, May 1975.

Zeilik, II, M., and R. J. Bieniek. "PSI Astronomy at Harvard." 143rd Meeting of the American Astronomical Society, Rochester, New York, August 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 6 (1974), page 331.

Zuckerman, B., B. E. Turner, D. R. Johnson, F. O. Clark, F. J. Lovas, N. Fourikis, M. Morris, P. Palmer, C. A. Gottlieb, A. E. Lilley, M. M. Litvak, and H. Penfield. "Ethyl Alcohol Detected in Interstellar Space." 144th Meeting of the American Astronomical Society, Gainesville, Florida, December 1974. [Abstract] *Bulletin of the American Astronomical Society*, volume 6 (1974), page 443.

SMITHSONIAN SCIENCE INFORMATION EXCHANGE, INC.

SEMINARS AND WORKSHOPS

Carlson, W. T. "Grain Sorghum Research Registered at SSIE." Sorghum-Millet Information Workshop, AID, Department of State, Washington, D. C., May 12-13, 1975.

———. "Agricultural Research Information Retrieval from SSIE." Department of Agronomy, University of Nebraska, Lincoln, Nebraska, May 22, 1975.

Harper, Robert. "Solvent Effects in Nucleophilic Displacements on Halogen by Triphenylphosphine Leading to Alpha-sulfonyl Carbanions." Organic Chemistry Division Seminar, University of Maryland, College Park, Maryland, January 28, 1975.

———. "Solvent Effects in Nucleophilic Displacements on Halogen by Triphenylphosphine Leading to Alpha-sulfonyl Carbanions." Physical Chemistry Division Seminar, University of Maryland, College Park, Maryland, March 26, 1975.

Hersey, D. F. "Role of the Smithsonian Science Information Exchange in the Collection, Storage and Utilization of Information About Ongoing Research in Science and Technology." Meeting of the Association of Records Executives and Administrators, Washington, D. C., June 17, 1975.

Lucas, Charles W., Jr. "Fermi Motion Corrections to the Pion-Nucleus Optical Potential." 1975 Spring Meeting of the American Physical Society, Washington, D. C., April 30, 1975.

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

LECTURES AND SEMINARS

Dressler, Robert L. "Orquídeas de Panamá." Club de Plantas y Flores de Panamá, September.

———. "How to Study Orchids Without Any Orchids." Eighth World Orchid Conference, Frankfurt, April.

———. "Orchids of Panama." Canal Zone Orchid Society, Balboa, Canal Zone, October.

———, Judge. Annual Flower Show, Club de Jardineria, Panama, R. P. June. Glynn, Peter W. "Coral Reef Studies in the Eastern Pacific." Isthmian Chapter, American Photographic Society, Balboa, Canal Zone, April.

———. "Studies With Air-Breathing Fishes." Isthmian Scientific Society, Balboa, Canal Zone, June.

- Graham, Jeffrey B. "Heat Exchange in Warm-Bodied Fishes." San Diego State University, California, also National Marine Fisheries Service, Honolulu, Hawaii, October.
- . "Adaptations for Diving in *Pelamis platurus*." International Congress of Physiologists, New Delhi and Bhagalpur, India, October.
- . "Respiratory Adaptations of Marine Air-Breathing Fishes." International Congress of Physiologists, New Delhi and Bhagalpur, India, October.
- . "Respiratory Adaptations of Marine Air-Breathing Fishes." Florida State University, Tallahassee, and University of Massachusetts, Amherst, February.
- Leigh, Egbert G., Jr. "The Theory of Sex Ratio and of Sex Change in Relation to Male Dimorphism and Sex Change in the Bluehead Wrasse," lectures. Princeton University, Universities of Maryland, Michigan, Utah, and Wisconsin, April and May.
- . "Leaf Production, Consumption by Herbivores, and Modes of Regulation of Herbivore Numbers on Barro Colorado Island," lectures. Colorado State University; Stanford University; University of California at Berkeley, Los Angeles, Santa Barbara; University of Chicago. Also at the Arboreal Folivore Conference, Barro Colorado Island, Canal Zone, April and May.
- . "Structure and Physiognomy of Rain Forests, Lowland and Montane, Around the World, lectures. University of California, Santa Barbara; Scripps Institute of Oceanography; Colorado State University, April and May.
- Linares, Olga F. "The Past and Present Distribution of Swidden Cultivation in Latin America," seminar on the ecology of Latin America. University of California, Los Angeles, November.
- . "On the Mode of Production in Two Tropical Societies." American Anthropological Society Meeting, Mexico City, D. F., November.
- . "Conceptos Ecológicos sobre el Período Formativo en Centroamérica y Panamá." V° Simposio Nacional de Antropología, Arqueología y Etnología, Universidad de Panamá, Panamá, R. P., December.
- . "Prehistoria y Ecología en Panamá." Universidad de Santa María La Antigua, Colón, Panamá, June.
- . "La Arqueología de Panamá." Colegio América, Panamá, R. P., June.
- . "La Arqueología Panameña y las Culturas Nucleares en el Nuevo Mundo," public lecture, organized by the Mexican Embassy in Panama. June.
- Linares, Olga F., with Richard Cooke. "Differential Exploitation of Marine Resources on the Atlantic vs. the Pacific Coast of Western Panama." Society for American Archaeology, 40th Annual Meeting, Dallas, Texas, May.
- Macintyre, Ian G., and Peter W. Glynn. "Internal Structure and Developmental Stages of a Modern Caribbean Fringe Reef, Galeta Point, Panamá." Presented at the 7th Caribbean Geological Conference, Guadeloupe, July 1-5, 1974.
- Moynihan, Martin H. "Fluctuations in Neotropical Faunas," seminar sponsored by Latin American Center, University of California, Los Angeles. November.
- Rand, A. Stanley. "Reptiles as Arboreal Folivores." Arboreal Folivore Conference, Barro Colorado Island, Canal Zone, May.
- . "The Behavior and Neurology of Lizards." Arboreal Folivore Conference, Barro Colorado Island, Canal Zone, May.
- . "Behavioral Ecology of Lizards." Arboreal Folivore Conference, Barro Colorado Island, Canal Zone, May.
- Robinson, Michael H. "The Ethology of Web-Building Spiders." Oxford University, Oxford, England, February.
- Smith, Alan P. "Introduction to Ecology," Undergraduate lectures for course taught at University of Pennsylvania, Fall Term, 1974.

- Smith, Neal G. "Population Explosion in the Day-Flying Moth *Urania* in the Neotropics," lectures. Universities of Texas; California at Berkeley, Davis, Santa Barbara; British Columbia; and Cornell, Harvard, Princeton, Stanford, and Washington (St. Louis) Universities. November–January.
- . "Strategies and Counter-Strategies by Avian Hosts and Their Parasites," lectures. Universities of Texas; California at Berkeley, Davis, Santa Barbara; British Columbia; and Cornell, Harvard, Princeton, Stanford, and Washington (St. Louis) Universities. November–January.
- Wolda, Hindrik. "Fluctuations in Abundance of Some Homoptera in a Neotropical Forest." Third International Symposium on Tropical Ecology, Lubumbashi, Zaire, April.
- Wolda, Hindrik, and Robin Foster. "*Zunacetha annulata*, an Outbreak Insect in a Tropical Forest." Third International Symposium on Tropical Ecology, Lubumbashi, Zaire, April.

HISTORY AND ART

ARCHIVES OF AMERICAN ART

LECTURES AND SEMINARS

- Brown, Robert. "Preservation of Architectural Records." Society of Architectural Historians, Boston, April 1975.
- Karlstrom, Paul. "American Genre Painting." Oakland Museum, Oakland, California, October 1974.
- McCoy, Garnett. "Radical Art and Radical Politics, 1910–1930: Some Notes on American Connections." University of Delaware, Newark, Delaware, April 1975.

COOPER–HEWITT MUSEUM

- Rohlfing, Christian. "Art Deco–Will It Survive?" lecture. National Home Fashions League, Plaza Ballroom, New York, November 19, 1974.
- , judge. National Student Competition of Textile Design sponsored by the Sterling Silver Association, May 7–8, 1975.
- , judge. National Design Competition of Textile Design sponsored by Riegel Textile Corporation, May 9, 1975.
- , judge. National Competition of Needlework sponsored by *Ladies Home Journal*, New York, June 6, 1975.
- . Radio interview on Cooper-Hewitt for Municipal Art Society program.

Department of Drawings and Prints

- Dee, Elaine. Lecture on Winslow Homer Exhibition in London. Victoria and Albert Museum, London.

Textile Department

- Sunday, Milton. "The Structures of Fabrics," lecture for conservation students of the University of Delaware. Winterthur, September 20, 1974.
- . "Fabrics of the 20th century," lecture for the Philadelphia Guild of Handweavers. November 7, 1974.
- . "Fibers in Fabrics and Their Uses," lecture for the New York School on Continuing Education. New York University, November 26, 1974.
- , consultant. Advice on care and storage of fabrics and other objects in the Frick collection in the 5th Avenue house of Mr. and Mrs. Henry Clay Frick.

Wallpaper Collection

- Frangiamore, Catherine. "The Paper Revolution." Historic Deerfield Summer Series, Deerfield, Massachusetts, July 15, 1974.
- . "18th and 19th Century Wallpaper." Friends of the Mint, Mint Museum, Charlotte, North Carolina, September 13, 1974.
- . "Wallpaper, Fabrics and Needlework in America, 1865-1914." Midwest Antiques Forum, Henry Ford Museum and Greenfield Village, Dearborn, Michigan, October 9, 1974.
- . "The Paper Revolution." International Garden Club, Bartow-Pell Mansion, Pelham, New York, October 17, 1974.
- . "18th and 19th Century Wallpapers in America." Evening at Emory Series, Emory University, Atlanta, Georgia, October 27, 1974.
- . "Wallpapers of the 1880's." Victorian Society Workshop, The Victorian Society in America, Atheneum, Philadelphia, November 1, 1974.
- . "The Paper Revolution." Natchez Antiques Forum, Natchez, Mississippi, November 14, 1974.

FREER GALLERY OF ART

LECTURES

- Atil, Esin. "The Islamic Book." Regional Council for International Education, Cleveland, Ohio, October 1974.
- . "Arab Painting." United States State Department, Foreign Service Institute, Arlington, Virginia, February 1975.
- . "Firdausi and the *Shahname*." American Turkish Association, George Washington University, Washington, D. C., February 1975.
- . "Art of the Book." Middle East Institute, Washington, D. C., February 1975.
- . "Islamic Miniature Painting." United States State Department, Foreign Service Institute, Arlington, Virginia, February 1975.
- . "Paintings from Arab Lands." Welcome to Washington, Freer Gallery of Art, March 1975.
- . "Illustrated Islamic Manuscripts." The Municipal Art Society of Baltimore City, Maryland, April 1975.
- . "Illustrated Turkish Histories." Center of Near Eastern Studies, Harvard University, April 1975.
- . "Painting in Islam." United States State Department, Foreign Service Institute, Arlington, Virginia, April 1975.
- . "Ottoman History through the Works of the Court Painters." Department of Art, University of Chicago, Illinois, June 1975.
- . "Formative Years of Islamic Art." United States State Department, Foreign Service Institute, Arlington, Virginia, June 1975.
- Chase, W. Thomas, III. "Metallographic Samples from Chinese Bronzes." Massachusetts Institute of Technology, July 1974.
- . "My Trip to China." Annie Fisher Elementary School, Hartford, Connecticut, October 1974.
- . "My Trip to China." Bolton Congregational Church, Bolton, Connecticut, October 1974.
- . "China—Past and Present." Group from China Trade Museum and Essex Institute, Massachusetts, Mayflower Hotel, Washington, D. C., February 1975.
- . "Examination and Treatment of Chinese Bronzes." The Winterthur Program in the Conservation of Artistic and Historic Objects, Delaware, April 1975.
- . "My Trip to China." The Winterthur Program in the Conservation of Artistic and Historic Objects, Delaware, April 1975.

- . "Conservation in the People's Republic of China." International Institute for Conservation of Historic and Artistic Works, Stockholm, Sweden, June 1975.
- Hobbs, Susan. "Charles Lang Freer as a Patron of American Art. Part I: The Art of Thomas Dewing, Abbott Thayer and Dwight Tryon." Smithsonian Associates, Freer Gallery of Art, May 1975.
- . "Charles Lang Freer as a Patron of American Art. Part II: The Art of James McNeill Whistler." Smithsonian Associates, Freer Gallery of Art, May 1975.
- Lawton, Thomas. "Neolithic and Shang Art in China." George Washington University, Sino-Soviet Institute, Washington, D. C., September 1974.
- . "Chou Dynasty Bronze Vessels." George Washington University, Sino-Soviet Institute, Washington, D. C., September 1974.
- . "The Sixtieth Painting: An Ancient Theme Reidentified." Asian Arts Society, Washington University, St. Louis, Missouri, October 1974.
- . "Chinese Buddhist Art." George Washington University, Sino-Soviet Institute, Washington, D. C., November 1974.
- . "Zen Art in China." George Washington University, Sino-Soviet Institute, Washington, D. C., November 1974.
- . "Recent Archaeological Finds in the People's Republic of China." George Washington University, Sino-Soviet Institute, Washington, D. C., December 1974.
- . "Recent Archaeological Finds in the People's Republic of China." Cosmos Club, Washington, D. C., December 1974.
- . "Recent Archaeological Finds in the People's Republic of China." Archaeological Institute of America, Washington, D. C., January 1975.
- . "Early Chinese Landscape Painting." George Washington University, Sino-Soviet Institute, Washington, D. C., January 1975.
- . "Recent Archaeological Finds in the People's Republic of China." National Academy of Science, Washington, D. C., January 1975.
- . "Yüan Dynasty Painting." George Washington University, Sino-Soviet Institute, Washington, D. C., January 1975.
- . "Ming Dynasty Painting." George Washington University, Sino-Soviet Institute, Washington, D. C., February 1975.
- . "The Sixtieth Painting: An Ancient Theme Reidentified." Harvard University, Cambridge, Massachusetts, February 1975.
- . "Recent Archaeological Finds in the People's Republic of China." Washington Club, Washington, D. C., February 1975.
- . "Reflections on the Chinese Exhibition." Princeton University, Princeton, New Jersey, March 1975.
- . "Ch'ing Dynasty Painting." George Washington University, Sino-Soviet Institute, Washington, D. C., March 1975.
- . "Chinese Connoisseurship." George Washington University, Sino-Soviet Institute, Washington, D. C., March 1975.
- . "Reflections on the Chinese Exhibition." Museum Rietberg, Zürich, Switzerland, May 1975.
- . "Bronze Ritual Vessels of the Shang and Chou Dynasty." University of Missouri, Kansas City, Missouri, June 1975.
- Lovell, Hin-cheung. "Chinese Ceramics in the Freer Gallery of Art." Smithsonian Associates, Freer Gallery of Art, October 1974.
- Stern, Harold P. "Tokugawa Popular Paintings of Japan." Museum of Fine Arts, Boston, Massachusetts, February 1975.
- Winter, John. "The Scanning Electron Microscope in the Study of Carbon Pigments." The Pacific Conference on Spectroscopy, San Francisco, California, October 1974.

HILLWOOD

- Ross, Marvin C. "Russian Art at Hillwood," talk for group going on a tour of Russia, organized by the Graduate School of the U. S. Department of Agriculture, September 1974.
- . "Russian Porcelains at Hillwood," lecture. Smithsonian Resident Associates Program, February 1975.
- . "The Hillwood Collections," lecture. National Collection of Fine Arts staff, April 1975.
- . "The Hillwood Collections," lecture. Lake Forest (Illinois) Academy Antique Show Press Party, May 1975.

HIRSHHORN MUSEUM AND SCULPTURE GARDEN

LECTURES AND SEMINARS

- Garson, Inez. "The Hirshhorn Museum and Sculpture Garden." Washington, D. C., NBC-TV, October 19, 1974.
- . "Late Nineteenth and Early Twentieth Century American Art." Polish Television, December 1974.
- Lawson, Edward P. "Principles of Museum Work." *Art History* 146, George Washington University, September 1974–April 1975.
- . Series of lectures on the Museum collections. Second Hirshhorn Museum and Sculpture Garden docent class, January 7, 1975–April 15, 1975.
- . "Museum Administration," lecture. *Museology-Anthropology* 291, George Washington University, January 29, 1975 and February 26, 1975.
- . Talk on Hirshhorn Museum and Sculpture Garden with slides, videotaped by Northeastern Illinois University for production on University station, March 14, 1975.
- . Talk on Hirshhorn Museum and Sculpture Garden with slides to advanced painting class. Northeastern Illinois University, March 15, 1975.
- . "The Training of Museum Docents." Smithsonian Institution Museum Programs sponsored course, April 4–17, 1975.
- . "20th Century Painting and Sculpture, Sculpture 1945-present." Hirshhorn Study Tours, April 12, 19, 21; May 3 and 31, 1975.
- . tour leader. Smithsonian Associates Study Tour to Falling Water in Bear Run, Pennsylvania, October 26, 1974.
- Lerner, Abram, and Edward Lawson. "The Hirshhorn Museum," radio broadcast, WAMU-FM, Washington, D. C., November 25, 1974.
- McCabe, Cynthia J. "Museum Curators," Northeast Museums Conference, Buffalo, New York, October 30, 1974.
- . "The Hirshhorn Museum and Sculpture Garden Collection," lecture. ARLIS/D.C. Chapter, Washington, D. C., November 6, 1974.
- . "AAM Curators' Committee," American Association of Museums Curatorship Seminar, Washington, D. C., January 27, 1974.
- . "Material Aspects of American Civilization: Immigrant Artists," lecture. George Washington University, Washington, D. C., June 18, 1975.
- Tighe, Mary Ann. 20 half hour TV programs tracing the history of American art from colonial times to the present. *Art America* television series, produced in conjunction with Northern Virginia Community College's Extended Learning Institute and the Instructional Television Cooperative.
- . "Contemporary Sculpture in the Hirshhorn Museum and Sculpture Garden Collection. Georgetown University Course, January through May.
- . "Nineteenth Century Sculpture." Smithsonian Associates Lectures, April 12, 1975 and May 31, 1975.
- . "Nineteenth Century Painting." Smithsonian Associates Lectures, April 17, 1975.

- . "Painting Since 1945." Smithsonian Associates Lectures, April 21, 1975.
- . "Thomas Hart Benton." Smithsonian Associates Lectures, April 7, 1975.
- . "Art in the Hirshhorn Museum and Sculpture Gallery Collection." University of Chicago Alumni, January 26, 1975; and Vassar College Alumni, Fall 1974.
- Ultan, Roslye B., and Mary Ann Tighe. "Surrealism." Smithsonian Associates Course, Washington, D. C., April–June 1975.
- . "The Hirshhorn Museum and Sculpture Garden Collection." Radio broadcast, Museum Forum, Richmond, Virginia, April 1975.
- Weil, Stephen E. *The Artist and the Marketplace*, panel presentation. Hirshhorn Museum and Sculpture Garden, February 26, 1975.
- Zilczer, Judith K. "Robert T. Coady: Forgotten Spokesman for Avant-Garde Culture in America," lecture. Fifth Annual Symposium on American Art, cosponsored by the University of Delaware and the National Collection of Fine Arts, University of Delaware, Newark, April 18, 1975.
- . "Art in America: 1900–1925." Smithsonian Associates Course, Washington, D. C., April–June 1975.

JOSEPH HENRY PAPERS

LECTURES AND SEMINARS

- Aldrich, Michele L. "Science and Politics in Jacksonian New York." Nineteenth Century Seminar, Smithsonian Institution, September 25, 1974.
- . "Historical Editing," Panel Discussion on Careers in History Other Than Teaching. History Department, Columbia University, April 7, 1975.
- Hobbins, James M. "The Albany Institute and Vicissitudes in the Learned Culture," American Academy of Arts and Sciences' Symposium on Knowledge in American Society, 1860–1920, Newagen, Maine, June 1975.
- Lepley, Beverly Jo. "The Dilemma of Epilepsy." Virginia Licensed Practical Nurses Association, March 18, 1975, The Hermitage, Alexandria, Virginia
- Molella, Arthur P. "The Origins of Science," three credit lecture course. University of Maryland, Fall 1974.
- Reingold, Nathan. "World War I: the Case of the Disappearing Laboratory." Organization of American Historians, Boston, April 18, 1975.
- . National Science Policy in a Private Foundation: the Carnegie Institution of Washington, 1902–1920." American Academy of Arts and Sciences' Symposium on Knowledge in American Society, 1860–1920, Newagen, Maine, June 1975.
- . "Hanged and Electrocuted: Joseph Henry's Experiments on the Murderer LeBlanc." Washington History of Medicine Club, November 14, 1974.
- . "Preview of Volume Two of the Henry Papers." Smithsonian Associates, September 22, 1974.

NATIONAL COLLECTION OF FINE ARTS

LECTURES AND SEMINARS

- Bassing, Allen. "Intra Cultural Conflict, The Ashanti of Ghana—a Case Study," lecture. Conference on Working Papers in Culture and Communication, Temple University, Philadelphia, Pennsylvania. March 1975.
- . "The Social, Historical and Architectural Background of the Renwick," lecture series. Smithsonian Associates, March–April 1975.
- , consultant/panelist. "Panel on Elementary and Secondary Education." National Endowment for the Arts, Washington, D. C., May 1975.

- Birmingham, Peter. "Barbizon Art In America," lecture. American Studies Class, Georgetown University, February 1975.
- , panelist. "The Future of Art Symposium." George Washington University, March 1975.
- . Introduction and workshop discussion with Foreign Museum Directors. Sponsored by International Committee of Museums, U. S. Department of State, May 1975.
- Breeskin, Adelyn D., judge. "Shreveport Art Guild National Show." Louisiana, October 14, 1974.
- . "The Cone Collection, lecture." Baltimore Museum of Art, Baltimore, Maryland, October 29, 1974.
- Fink, Eleanor, panel moderator. "Computers, Information Retrieval, and Art." Annual Conference of the Art Libraries Society of North America, January 21, 1975.
- . "Computer Cataloging of Slides and Photograph Collections," lecture. Slide Librarianship: a Contemporary Survey Seminar. New York City, May 5-7, 1975.
- Flint, Janet, juror. Ninth Print and Drawing Competition. The Dulin Gallery of Art, Knoxville, Tennessee, March 30-April 1, 1975.
- . "The American Painter-Lithographer," lecture. American Print Conference, American Prints of the Nineteenth Century, Museum of Fine Arts, Boston, Massachusetts, May 9-10, 1975.
- Gordon, Margery. "Mobility in Art: An Innovative Approach to Children's Education Programs," lecture. International Conference on Art Education, Novi Sad, Yugoslavia, August 1974.
- Grana, Teresa. "Unstuffing the Museum," lecture. Montgomery Junior College, Silver Spring, Maryland, April 1975.
- Herman, Lloyd, juror. Northwest Crafts Show, Henry Gallery, University of Washington, Seattle, Washington, January 6-7, 1975.
- , juror. Craft Multiples Exhibition, Washington, D. C., February 6-9, 1975.
- , juror. Design In Steel Awards, American Iron and Steel Institute, Washington, D. C., February 10, 1975.
- , juror. Craftsmen's apprenticeship applications for the National Endowment for the Arts, Washington, D. C., March 15, 1975.
- , judge. College Park Art Festival, Orlando, Florida, May 3-4, 1975.
- , panelist. "The Crafts Explosion Panel." Women's National Democratic Club, Washington, D. C., May 19, 1975.
- Hopps, Walter. "40 Paintings from American Universities." University Gallery, University of Florida, Gainesville, Florida, November 24, 1974.
- . "New Directions in American Art." American Cultural Center, Paris, France, January 16, 1975.
- . "The NCFA Collection." Austro-American Society, Vienna, Austria, January 20, 1975.
- . "Men and Women in Art: Power and Money." Panel Discussion, Women's Caucus for Art Workshop, 63rd Annual Meeting of the College Art Association of America, Washington, D. C., January 24, 1975.
- . "California Art, 1953-1963." Mount Holyoke College, South Hadley, Massachusetts, March 5, 1975.
- . "Current Art and Its Institutions," dialogue with Lawrence Alloway. Associated Students and Academic Affairs of San Francisco State University, San Francisco, California, May 21, 1975.
- Lowe, Harry, juror. "1974 Mid-States Exhibition." Evansville, Indiana, October 28-29, 1974.
- . "James Hampton's Throne of the Third Heaven of the Nation's

- Millenium General Assembly." Wesleyan College, Macon, Georgia, January 13, 1975.
- . "Museums: Their Changing Roles," panel discussion. Montgomery College Art League, Montgomery College, Rockville, Maryland, April 15, 1975.
- Lyons, Florine E., symposium participant. "Surrealism—A Celebration." Pennsylvania State University, University Park, Pennsylvania, November 7–9, 1974.
- Monroe, Michael W., judge. "Third Annual Invitational Crafts Exhibition." Norfolk, Virginia, July 5–6, 1974.
- , juror. "First National Competition of the Enamelist Guild of Washington, D. C.," October 20, 1974.
- , juror. "In-Com-Co 1974 Art Show." Interstate Commerce Commission, Washington, D. C., November 11, 1974.
- . "Tour of the Renwick and Current Programs," lecture. International Club, December 5, 1974.
- . "Craft Exhibition Installation Techniques," lecture. Bethesda Potters Guild, Bethesda, Maryland, February 19, 1975.
- . "Careers in Design," lecture. McLean High School, McLean, Virginia, April 29, 1975.
- . "The History of the Renwick Gallery," lecture. Vanderbilt University, Nashville, Tennessee, May 1, 1975.
- , judge. "Tennessee Arts and Crafts Association's 4th Annual Fair," Nashville, Tennessee, May 2, 1975.
- , juror. "Waterford Weavers Exhibition," Reston, Virginia, May 5, 1975.
- Muhlert, Jan K., judge. "The Washington Post Recreation Association. Third Annual Arts, Crafts and Photograph Show." Washington, D. C., December 6, 1974.
- , judge. "Second Annual Photography Contest." Smithsonian Associates, Washington, D. C., February 26, 1975.
- . "The Art Scene in Washington, lecture. Smithsonian Associates Class: "The Quality of Life in Washington," Washington, D. C., March 10, 1975.
- . "The Rise of the American Avant-Garde: 1910–1930," lecture. National Collection of Fine Arts and Department of Art History, University of Delaware Symposium, Newark, Delaware, April 18, 1975.
- Myette, Ellen M. "Tour of the Renwick and Current Programs," lecture. International Club, December 5, 1974.
- Taylor, Joshua C. "Mural Painting and the Public Image," lecture. National Academy of Design, New York City, November 13, 1974.
- . "Los Problemas de un Museo de Arte Nacional," lecture. Caracas, Venezuela, December 1974.
- . "El Arte Visual y Valores Literarios," lecture. Museo de Bellas Artes, Caracas, Venezuela, December 1974.
- . "Que Pasó con la Vanguardia?" lecture. Universidad Central, Caracas, Venezuela, December 1974.
- . "The Religious Impulse in American Art," lecture. Friends of Independence National Historical Park Symposium: "Meaning in American Art," Philadelphia, Pennsylvania, April 15–17, 1975.
- . "What Do You Teach An Artist?" lecture. Union of Independent Colleges of Art Seminar, Philadelphia, Pennsylvania, April 27, 1975.
- . "The Art Museum and Its Public," lecture. Western Association of Museums Seminar, Portland, Oregon, May 1, 1975; Seattle, Washington, May 5, 1975.
- . "Art and Religious Impulse," lecture. Society for the Arts, Religion and Contemporary Culture, Inc., New York City, May 17, 1975.
- . "An Environment for the Mind," lecture. University of Chicago Library Society, Chicago, Illinois, May 20, 1975.

NATIONAL MUSEUM OF HISTORY AND TECHNOLOGY

LECTURES, SYMPOSIA, REPORTS, CONFERENCES,
INTERVIEWS, PERFORMANCES, AND RESTORATIONS

- Adrosko, Rita J. "Nineteenth Century Furnishing Fabrics," lecture. National Museum of History and Technology, August 27, 1974.
- . "Textiles in Poland," lecture. Designer-Weaver Group, Washington, D. C., November 16, 1974.
- . "An Introduction to Household Textiles Used in America," lecture. Columbia University, New York, April 1, 1975.
- . "18th Century American Weavers and Their Looms," lecture. Textile Museum Roundtable, Washington, D. C., April 12, 1975.
- Ahlborn, Richard Eighme. "The Saints of San Xavier: Examples of Technology in Spanish Colonial Sculpture." Grand Quivira Conference, Santa Barbara, California, October 1974.
- . "The Log Grist Mill of Maximiano Cruz at Trampas, New Mexico." Grand Quivira Conference, Santa Barbara, California, October 1974.
- . "Spanish Traditions in the United States." The Spanish Heritage Foundation, New York City, November 1974.
- . "Hispanic Artistic Influences in The Southwest." First in Series of Lectures on Frontier America, The Museum of Fine Arts, Boston, January 1975.
- . "Latin American Art Since Independence," graduate course in History. George Washington University, Washington, D. C., March 1975.
- . "The Spanish Culture of New Mexico," graduate course in American Studies. Smithsonian Institution, Washington, D. C., April 1975.
- Battison, Edwin A. "David Wilkinson's Lathe: Key to Industrialization of the United States." XIV Congress for the History of Science, Tokyo, Japan, August 22, 1974.
- Boorstin, Daniel J. "Public Policy Goals for America." National Legislative Conference, Albuquerque, New Mexico, August 14, 1974.
- . "New Direction in the Arts." National Town Meeting, Kennedy Center for the Performing Arts, Washington, D. C., August 21, 1974.
- . "The Uses of History." Brigham Young University Forum Assembly, Brigham Young University, Provo, Utah, September 24, 1974.
- . "Outlook for Space: 1980-2000." SI-NASA-sponsored seminar at Hammersmith Farm, Rhode Island, October 4-5, 1974.
- . "The American Revolution: Purpose and Fulfillment." Alma College, Alma, Michigan, October 24, 1974.
- . "A Historian's Perspective on the U. S." Association of National Advertisers, Inc., Hot Springs, Virginia, October 28, 1974.
- . "A New Look at American Technology." Norfolk Forum, Norfolk, Virginia, November 12, 1974.
- . Keynote address at conference on "Youth and Democracy." Committee of Seventy, Philadelphia, Pennsylvania, November 21, 1974.
- . "American Life and the Exploring Spirit." American Historical Library, Manila, Philippines, December 17, 1974.
- . "What Historians Don't Write About." The National Historical Commission, National Library, Manila, Philippines, December 18, 1974.
- . "The New Nationalism," convocation address. University of Santo Tomas, Manila, Philippines, December 18, 1974.
- . "The Educational Challenge in a Democracy." Videotaped at U.S.I.S., Manila, Philippines, December 19, 1974.
- . "On American Education." University of the Philippines, Manila, Philippines, December 19, 1974.
- . "New Subjects for Historians." Chula University, Bangkok, Thailand, December 27, 1974.

- . "Education in America." Chiang Mai University, Chiang Mai, Thailand, January 3, 1975.
- . "The American at School." American University Association, Bangkok, Thailand, January 6, 1975.
- . "Thoughts on American History." NIDA, Bangkok, Thailand, January 7, 1975.
- . "On Historical Writing." Thammasat University, Bangkok, Thailand, January 9, 1975.
- . "Advertising in American Civilization." American Library Resource Center, Singapore, January 13, 1975.
- . "The Bias of Survival." University of Singapore, Singapore, January 14, 1975.
- . "A New Vocabulary for Historians." Lincoln Cultural Center, Kuala Lumpur, Malaysia, January 16, 1975.
- . "The Great American Temptation." Universiti Kegangsaan, Kuala Lumpur, Malaysia, January 17, 1975.
- . "Art and the American Character." Penang Museum and Gallery, Penang, Malaysia, January 21, 1975.
- . "The American Spirit of Exploration." American Cultural Center, Bombay, India, January 23, 1975.
- . "The New Role of Predictability." Alexandria University, Alexandria, Egypt, February 15, 1975.
- . "The Historian's Secret Weapon." Cairo University, Cairo, Egypt, February 17, 1975.
- . "A New Definition of the Exploring Spirit." American University, Cairo, Egypt, February 17, 1975.
- . "Two American Transformations." Association of Teachers of the Social Studies, New York, February 22, 1975.
- . "When Does the Future Begin?" Museum of Art, Carnegie Institute, Philadelphia, February 26, 1975.
- . "The American Revolution, Promise and Fulfillment," Harding Lecture. South Dakota State University, Brookings, South Dakota, March 17, 1975.
- . "America: Retrospect and Prospect." Casper College, Casper, Wyoming, March 21, 1975.
- . "The New Challenge of Technology." American Marketing Association, Chicago, April 15, 1975.
- . "Museum Magic: Transforming Things into Objects." Eleutherian Mills-Hagley—University of Delaware, Newark, Delaware, April 24, 1975.
- . "Discovery of the Unknown." Yale University, New Haven, June 24, 1975.
- Bruns, Franklin R., Jr. "Your National Stamp Collection." Seashore Stamp Collectors' Club, Marlborough-Blenheim Hotel, Atlantic City, N. J., March 1, 1975.
- . "The Smithsonian and Its Stamp Collection." The Collectors Club of Washington, D. C., May 7, 1975.
- . Radio Interviews, WNCN, New York, N. Y. July 14, 1974, with Lester G. Brookman, "19th Century United States Stamps"; July 28, 1974, with John Van Emden, "Philatelic Merchandising"; August 11, 1974, with Keith Melder, "The Chautauque"; August 25, 1974, "Franklin D. Roosevelt—His Stamps"; September 8, 1974, with Gordon H. Torrey, "The Near East, and Expertization," and September 22, 1974, with Donald Moler and John Flawn Williams, "United States Postal Service and Its Stamp Program."
- Clain-Stefanelli, Elvira, member of the official jury for the selection of designs for the national bicentennial coinage. Philadelphia, January 8–12, 1974; and New York, February 28–March 2, 1974.
- Clain-Stefanelli, Vladimir. "Numismatics in Israel." The Israel Numismatic Society of Maryland, April 3, 1974.

- Coffee, Barbara J. "We the People, A New Bicentennial Exhibition." Rockville American Association of University Women, May 17, 1975.
- Cooper, Grace R. "The Machines, Mechanization of Textile and Clothing Production." Costume Society of America Symposium on America Dress, National Museum of History and Technology, Washington, D. C., April 9, 1975.
- Dirks, Katherine. "The Care and Preservation of Antique Textiles," lecture. County Extension Agents Training Conference, Purdue University, West Lafayette, Indiana, January 21, 1975.
- Davis, Audrey B. "Dentistry and History—Partners in Research." American Academy of History of Dentistry, Washington, D. C., November 8, 1974.
- . "Medicine and Its Technology: A Retrospective View." Yale University, Department of History of Science and Medicine, March 23, 1975.
- . Microscope Symposium (organized and introduced three speakers), Washington, D. C., National Museum of History and Technology, May 9, 1975.
- . "Dentistry and Medicine: Some Factors in the Evolution of a Profession." Andrews Air Force Base, History of Dentistry Club, May 20, 1975.
- . "Thomas Louis J. Auzoux and the Papier Mache Anatomical Model." International Conference on Wax Models, Florence, Italy, June 4, 1975.
- Fesperman, John T. Organ Recital on 1831 Goodrich organ featuring American music. Unitarian Church, Nantucket, Massachusetts, August, 1974.
- . "Recent Trends in American Organ Design." Organ Recital and Lecture, Winston Churchill Memorial, Westminster, Missouri, October 20, 1974.
- . "European Influences on American Organ Building." Organ Recital and Lecture, Yale University, New Haven, Connecticut, November 15, 1974.
- . "Organ Music of Spain, Germany and France." Organ Recital, Fourth Annual Meeting, American Musical Instrument Society, New York, April 4, 1975.
- . Organ Recital on the first modern American instrument designed in classic style (1961). Mount Calvary Church, Baltimore, April 27, 1975.
- . Organ Recital and Lecture on Organ Design. Community School for the Arts, Charlotte, North Carolina, May 13, 1975.
- Finn, Bernard S. "Historiographic Problems Associated with the Study of 19th Century Electrical Technology." Johns Hopkins University, Baltimore, Maryland, October 18, 1974.
- . "The Telegraph: How It Came To Be," children's program. KOMO-TV, Seattle, Washington, February 23, 1975.
- Forman, Paul. "Institutionalized Gatherings of Physicists: Forms and Functions to 1914." Joint Atlantic Seminar on the History of the Physical Sciences, New Haven, March 21–22, 1975.
- . "Illustrated Observations on the Building of Physical Laboratories at the Turn of the Century." Program in History and Philosophy of Science, Princeton University, April 4, 1975.
- Gardner, Paul V. "Reminiscences of Frederick Carder." Corning Museum Seminar, October 1974.
- . "Rarities in Glass." Christ Child Seminar, Washington, D. C., April 1975.
- . "The Glass of Frederick Carder." Combined meeting of three Maryland Early American Glass Clubs, Aspen Hill Library, Maryland, April 18, 1975.
- Goins, Craddock R., Seventh Congress of the International Association of Arms and Military History, Paris, May 4–13, 1975.
- Golovin, Anne C. "Collections and the Historian." Seminar for Historical Administrators, Williamsburg, Virginia, July 8, 1974.

- . "Furniture Makers of Washington, D. C., 1791–1840." Columbia Historical Society, Washington, D. C., May 21, 1975.
- Haberstich, David E. "The History of Photography," lecture course. University of Maryland, College Park Campus, Fall Semester, 1974.
- Hamarneh, Sami K. "Research Techniques, Historiography and the History of Pharmacy." Syrian Pharmaceutical Society, Damascus, Syria, October 23, 1974.
- . "Pharmacy and Materia Medica of al-Biruni and al-Ghafiqi." Fourth Congress of Arab Pharmacists, Cairo, Egypt, October 29–November 1, 1974.
- . "Problems of Techno-Scientific Manuscripts from the Arabic Legacy." The Arab League, UNESCO, Cairo, Egypt, November 20, 1974.
- . "Medicinal Herbs and Origins of Drug Therapy." The Herb Society of America, Potomac Unit, Washington, D. C., March 19, 1975.
- Hindle, Brooke. "Science and Technology in the American Revolution." Adelphi-Hofstra Universities Institute: "New Viewpoints on the American Revolution," Hofstra University, Hempstead, New York, July 31, 1974.
- . "The Transfer of Technology and American Industrial Fairs to 1853." XIVth International Congress of the History of Science, Tokyo, Japan, August 1974.
- . "Preoccupation with Exhibits." Museum Studies Conference, University of Delaware, Newark, Delaware, April 19, 1975.
- Hoffman, John N. "Mechanization of the U. S. Coal Industry in the 19th Century," lecture. U. S. Army Mobilization Detachment, Washington, D. C., November 19, 1974.
- . "Bicentennial Programs at the Smithsonian Institution," lecture. Middletown JayCees, Middletown, Pennsylvania, January 18, 1975.
- . "Mining Collections at the Smithsonian Institution," lecture. Pine Ford Chapter, D. A. R., Middletown, Pennsylvania, February 10, 1975.
- . "Collecting Business History at the Smithsonian," Middletown Historical Society, Middletown, Pennsylvania, March 24, 1975.
- . "Coal—The Energy Source of the Future," lecture. U. S. Army Mobilization Detachment, Washington, D. C., May 20, 1975.
- Hollis, Helen R. "Musical Instruments of the Baroque and Early Classical Eras in the Smithsonian Institution," a set of 56 slides with explanatory notes and two cassette tapes for educational use (in cooperation with Customer Services Branch of Photographic Services Division, Smithsonian), 1975.
- Hollis, Helen R. Lecture-Demonstration on Musical Instruments (in French) for Alliance Francaise. Hall of Musical Instruments, National Museum of History and Technology, February 19, 1975.
- . "Some Questions, Some Answers." Lecture for the International Conference on Musical Iconography, New York, April 26, 1975.
- Hoover, Cynthia A, panelist. "Mechanical Instruments As A Source for Musicological Research." American Musicological Society, 40th Annual National Meeting, Washington, D. C., November 2, 1974.
- , chairman of session. "19th-Century Musical Instruments." Fourth Annual Meeting, American Musical Instrument Society, New York, April 5, 1975.
- . "There's A Good Time Coming! A Re-creation of American Music and Ballroom Dance 1840–1860," lecture. Music Teacher's National Association National Convention, Denver, April 10, 1975.
- . "Music in Museums: The Music Program at the Smithsonian and Career Opportunities in Museums and in American Music," lecture. Department of Music, Smith College, May 7, 1975.
- . 19th-Century American Ballroom Music. Nonesuch Records, H-71313, 1975. (Record annotations and Smithsonian Coordinator).

- Jackson, Everett A. "Career Development in the Medical Sciences." D. C. Teachers Workshop and Career Development Program, National Museum of Natural History, August 1, 1974.
- . "Colonial Dentistry in America." Lecture to Smithsonian Docents, September 25, 1974.
- . "The Smithsonian Institution Past and Present." American Dental Association, November 11, 1974.
- . "Section of Dentistry." Delegates to the American Academy of the History of Dentistry, November 8, 1974.
- Kidwell, Claudia B. Address on the exhibition "Suiting Everyone" and the importance of university collections for research and study. Human Development College faculty, Cornell University, November 1974.
- Klaphor, Margaret B. "Victorian Food Service." Workshop of The Victorian Society in America, Philadelphia, Pennsylvania, November 1, 1974.
- . "Charles County—1775." Annual Meeting. Charles County, Maryland, May 24, 1975.
- Kloster, Donald E. "The Manufacture of Readymade Clothing in the United States from 1800 to 1850." Symposium of American Dress held by the Costume Society of America, National Museum of History and Technology, Washington, D. C., April 8, 1975.
- Langley, Harold D. "Adventures in Flag Hunting," address, Annual Meeting of the North American Vexillological Association, Baltimore, Maryland, October 13, 1974.
- . "The Military and American Society," graduate level course. Catholic University of America, Washington, D. C., fall semester 1974.
- . "The Diplomatic History of the United States in the Twentieth Century," undergraduate level course. Catholic University of America, Washington, D. C., spring semester, 1975.
- . "The Roosevelt-Churchill Relationship," Radio interview with Ian McIntyre. British Broadcasting Corporation, May 13, 1975.
- Lundeberg, Philip K. "Shipbuilding in the United Colonies, as Revealed in the Continental Gondola Philadelphia." Conference of the International Commission of Maritime History, National Maritime Museum, Greenwich, London, England, July 6–10, 1974.
- . "Time Capsule 1776: The Continental Gondola *Philadelphia*." Connecticut Historical Society, Hartford, Connecticut, March 3–5, 1975.
- . "Time Capsule 1776: The Continental Gondola *Philadelphia*." Philadelphia Maritime Museum, Philadelphia, Pennsylvania, May 7, 1975.
- . "Time Capsule 1776: The Continental Gondola *Philadelphia*." Historic Naval Ships Association, Annapolis, Maryland, May 9, 1975.
- Marzio, Peter C. "The History of a Democratic Art: From Copley to Pollack." Independence Park, Philadelphia, Pennsylvania, April 16, 1975.
- . "American Political Cartooning." Popular Culture Association, Hofstra University, April 17, 1975.
- . "The Rise and Fall of the American Chromo: 1840–1940." American Print Conference, Boston Public Library, May 10, 1975.
- . "Rube Goldberg and the Modern Engineer." Louisiana Tech University, April 30, 1975.
- . "The American Etching Movement: 1875–1910." The Martin Luther King Library, Washington, D. C., May 20, 1975.
- Mayo, Edith P. "Contemporary Collecting," graduate seminar class in museum education. George Washington University, August 1974.
- . "Producing a Bicentennial Exhibit." The League of Women Voters, Washington, D. C., October 31, 1974 and January 28, 1975.
- Mayr, Otto, "The Dynamics of High Speed Steam Engines." American Society of Mechanical Engineers, Annual Meeting, New York, November 19, 1974.

- , "Charles T. Porter and Steam Engine Dynamics." Interdepartmental Colloquium, Ohio State University, April 9, 1975.
- , "Theory and Practice in the Engineering Contributions of Charles Porter." History Colloquium, University of Delaware, April 28, 1975.
- Miller, J. Jefferson, II. "American Ceramic Imports, 1750-1850." American Ceramic Society Annual Meeting, Niagara Falls, New York, November 1974.
- Norby, Reidar. "Smithsonian, Your Next-door Philatelic Neighbor." Library of Congress Stamp Club, Washington, D. C., April 15, 1975.
- Odell, J. Scott. Supervision of the restoration (and accompanying documentation) by Thomas Wolf of the grand piano, John Broadwood & Sons, London, 1974 in the Smithsonian collection.
- , panelist. "Musical Instrument Restoration." Annual meeting, American Musical Instrument Society, New York, April 6, 1975.
- Pogue, Forrest D. "Early History of Lyon and Crittenden Counties, Kentucky." Opening of Symposium, Western Kentucky Bicentennial Celebration, Paducah, Kentucky, July 5, 1974.
- . "Soldier as Diplomat—Marshall Mission to China." Industrial College of the Armed Forces, October 2, 1974.
- . "Techniques of Oral History for the Army Historian." Conference of Army Historians, Washington, October 18, 1974.
- . "Education of a Biographer." Morehead State University, October 24, 1974.
- . "The Oral Interview." Northern Kentucky College, October 25, 1974.
- . "Oral History in the Writing of Biography." Virginia Commonwealth University, November 14, 1974.
- . "George C. Marshall, Soldier—Statesman." University of Richmond, November 15, 1974.
- . "Oral History Materials as Part of Library Archives." Workshop on Archives, George C. Marshall Research Library, November 21, 1974.
- , contributor. Seminar on a study of the Yalta Conference, Lehrman Institute, New York City, January 14 and February 11, 1975.
- . "George C. Marshall, Soldier—Statesman." Inauguration of Distinguished Lecture Series, Murray State University, February 17, 1975.
- . "How Marshall and his Staff Dealt with Theater Commanders in World War II." Army War College, February 24, 1975.
- . "Command Relations Between General Marshall and his Theater Commanders, Eisenhower, MacArthur and Stilwell." Marine Corps Schools, Quantico, Virginia, February 28, 1975.
- . "Program of the Eisenhower Institute," presidential address. Annual Meeting of the American Military Institute, April 12, 1975.
- . "Program of the Eisenhower Institute." U. S. Military Academy Cadet group, Museum of History and Technology, Smithsonian Institution, April 12, 1975.
- . "Leadership in World War II." Distinguished Lecture Series, Air Force Academy, April 17, 1975.
- . "Eisenhower as Military Commander." Military Historians Discussion Group of Military Classics, Ft. Myer, Virginia, April 20, 1975.
- . "The Value of Oral History." Symposium on oral history held by students of the topic from the University of Maryland and George Washington University, April 24, 1975.
- , panelist. "Impact of Korean War on American Foreign Relations." Symposium sponsored by the Harry S. Truman Library Institute, Kansas City, May 2, 1975.
- Post, Robert C. "Science & Technology at the New York Crystal Palace, 1853." Crystal Palace Symposium, New York, October 25, 1974.
- . "From Pillar to Post: The Plight of the Patent Models." Annual

- Meeting of the Society for the History of Technology, Chicago, December 29, 1974.
- . "The National Museum of History and Technology and the Bicentennial." Lecture to the Texarkana Historical Society, Texarkana, Texas, February 28, 1975.
- . "Patent Statistics, Invention, and Economic Growth: A Caveat," visiting lecture. Department of History, University of Delaware, April 21, 1975.
- . "1876: The Centennial Celebration." Symposium on Using and Abusing the American Past, 1775–1975, Old Sturbridge Village, Sturbridge, Massachusetts, May 4, 1975.
- Roth, Rodris. "The Centennial of 1876. Furniture and Other Decorative Arts." George Washington University Graduate Seminar, Smithsonian Institution, Washington, D. C., October 1974.
- , contributor and moderator of panel. "Floor Coverings in 18th Century America." 1975 Irene Emery Roundtable on Museum Textiles, Textile Museum, Washington, D. C., April 1975.
- Schlebecker, John T. "Agricultural Markets and Marketing in the North, 1774–1777," paper. Symposium, "Two Centuries of American Agriculture," National Museum of History and Technology, April 21, 1975.
- . "Standards of Excellence for Living Historical Farms and Agricultural Museums," paper. Fourth Annual Conference, Association for Living Historical Farms and Agricultural Museums, National Museum of History and Technology, April 24, 1975.
- , coordinator for Smithsonian Institution. "Two Centuries of American Agriculture," symposium jointly sponsored by: Smithsonian Institution, U. S. Department of Agriculture, and Agricultural History Society; National Museum of History and Technology, April 21–23, 1975.
- Sharrer, G. Terry, program manager. Fourth Annual Conference, Association for Living Historical Farms and Agricultural Museums, National Museum of History and Technology, April 23–25, 1975.
- Sheldon, Robert E. "The History and Sound of the Quinticlavé and the Ophicleide," lecture and performance with Robert Eliason, Henry Ford Museum. Fourth Annual Meeting, American Musical Instrument Society, New York, April 5, 1975.
- . *19th-Century American Ballroom Music*. Nonesuch Records, H-71313, 1975. (Restoration of brass and woodwind instruments used from the Smithsonian collection and performance on ophicleide, orchestral horn, and Saxhorn).
- Vann, Lois M. "Spinning and Weaving," lecture and demonstration. Anacostia Museum, Washington, D. C., March 1975.
- . "Mounting 2-Dimensional Textiles," tape, script and slide show. In cooperation with the Office of Museum Programs, Smithsonian Institution, 1975.
- . Spinning and weaving demonstrations and lectures, Textile Hall, National Museum of History and Technology, weekly September 1974–May 1975.
- Vogel, Robert M. "Building in the Age of Steam." Architectural Restoration Class, University of Maryland, October 22, 1974.
- . "Industrial Archeology—Its Past and Prospects." Symposium, "The Industrial Archeology of Paterson, New Jersey," October 26, 1974.
- . Arranged series of noontime lectures for local section of American Society of Mechanical Engineering, discussing various aspects of activities of the National Museum of History and Technology in mechanical engineering. Delivered lectures "Power Machinery" and "Pumping/Refrigeration" in this series.

- , chairman. Session on preservation and restoration of historic concrete structures at special historical session of American Concrete Institute Annual Meeting, Boston, Massachusetts, April 10, 1975.
- , and Peter S. Smith. "The Last Wheel Works," documentary film. Premiered "public" version at the Society for Industrial Archeology Conference, Baltimore, Maryland, April 1975.
- Walker, Paul E. "Eternal Cosmos and the Womb of History: Time in Early Ismaili Thought." 8th Annual Meeting of the Middle East Studies Association, Boston, November 9, 1974.
- . "The Invention of the Mechanical Clock and the Linear Notion of History." Delivered before the Medieval Circle, University of Virginia, April 22, 1975.
- Watkins, C. Malcolm. "Aspects of Historic Restoration." Annual Meeting, Johnston House Foundation, Half Moon Bay, California, June 1975.
- Weaver, James M. Lecture, Master Classes, Concerts. Faculty of Baroque Performance Institute, The Conservatory of Music, Oberlin College, July 1-24, 1974.
- . Performances (harpsichord) in Monteverdi opera "Poppea." Opera House, Kennedy Center, Washington, D. C., October 1974.
- . Solo Harpsichord Concerts (2), Radio Broadcast (1), Television Performance (1), Caracas, Venezuela, October 1974.
- . Harpsichord performance with Michel Piguët, Oboe and Recorder. Hall of Musical Instruments, National Museum of History and Technology, November 2, 1974.
- . Harpsichord Workshop for the American Musicological Society 40th Annual National Meeting, Washington, D. C., November 3, 1974.
- . Lectures on Baroque performance practice and Solo Harpsichord Concerts at Fort Lewis College, Durango, Colorado, and Utah State University, February 1974.
- . Performance (harpsichord) in a Bach cantata and Bach *Brandenburg Concerto IV*. Concert Hall, Kennedy Center, Washington, D. C., March 1974.
- , visiting lecturer. Lectures, Master Classes, Concerts. Department of Music, Cornell University, September, November 1974; February, March, April 1975.
- . Solo Harpsichord Concert. New Jersey State College, May 1975.
- . Harpsichord performance with Howard Bass, lute and guitar. Phillips Collection, Washington, D. C., May 11, 1975.
- . "Historic Keyboard Instruments," lecture, and two performances (harpsichord). *Baroque Music at Aston Magna*, Great Barrington, Massachusetts, June 20-22, 1975.
- . *19th-Century American Ballroom Music*. Nonesuch Records, H-71313, 1975. (Musical Director and performances on the square piano, Chickering & Sons, Boston, 1850).
- White, John H., Jr. "Railroad Exhibits at the U. S. Centennial, 1876," lecture. Graduate Course in American Studies, September 26, 1974.
- . "Smithsonian Railroad Exhibit." The Arts Club, Washington, D. C., October 1974.
- . "The Pioneer: Some New Facts about Chicago's First Locomotive." Main address, Railway and Locomotive Historical Society Annual Meeting, Chicago, May 4, 1975.

LECTURES TO SMITHSONIAN ASSOCIATES

- Battison, Edwin A. "The Evolution of American Technology." May 7, 1975.
- Clain-Stefanelli, Vladimir. "Fakes: Impostors of the Market Place," Class Session. Spring Semester, May 9, 1974.

- Collins, Herbert R. "Political Memorabilia in American History," ten lectures. April–June, 1975.
- Cooper, Grace R. "Textiles." The Evolution of American Technology series, May 14, 1975.
- Davis, Audrey B. Lecture on the Division of Medical Sciences, National Museum of History and Technology, June 22, 1975.
- Finn, Bernard S. "The Evolution of American Technology, Electric Power." May 21, 1975.
- Golovin, Anne C. "American Furniture in the Collections of the Department of Cultural History." November 5, 1974.
- . "American Furniture of the Federal Period." November 21, 1974.
- Harris, Michael R. Tours of the Pharmacy and Rehabilitation Medicine Halls, National Museum of History and Technology, June 1975.
- Hindle, Brooke. "NMHT Bicentennial Exhibits." February 11, 1975.
- Marzio, Peter C. "The History of American Prints," ten lectures. October–December, 1974.
- Mayo, Edith P. "Women in Politics." May 8, 1975.
- Multhauf, Robert P. "America's Wooden Age." November 12, 1974.
- Post, Robert C. "The Evolution of American Technology." June 25, 1975.
- Vann, Lois M. "Textile Preservation." May 20, 1975.
- White, John H., Jr. "History of the Steam Locomotive." April 20, 1975.

ILLUSTRATED LECTURES FOR THE PUBLIC

- Bruns, Franklin R., Jr. "FDR—Our Stamp Collecting President." August 6, 1974.
- Collins, Herbert R. "Campaigning American Style." October 1, 1974.
- Finn, Bernard S. "Submarine Telegraph, the Grand Victorian Technology." July 23, 1974.
- Gardner, Paul V. "This Glass Belonged to My Grandmother." September 17, 1974.
- Harris, Michael R. "The Evolution of the Drugstore." December 17, 1974.
- Jackson, Everett A. "Recipes, Remedies and Cures for the Teeth." October 29, 1974.
- Jaeschke, Carl H. "Tokens and Counters Man Has Used Throughout History." September 24, 1974.
- Norby, Reidar. "From Sweden with Love." March 19, 1974.
- . "Sizes, Shapes, and Uses of Postage Stamps." August 13, 1974.

MUSEUM PROGRAMS

CONSERVATION-ANALYTICAL LABORATORY

LECTURES AND SEMINARS

- Angst, Walter. "Conservation of Furniture and Other Objects." Smithsonian Associates, June 10, 1975.
- Konrad, A. J. "The Museum Conservator: Paintings and Sculpture." Smithsonian Associates, May 13, 1975.
- McMillan, Eleanor. "Paper Conservation in the Museum." Smithsonian Associates, May 13, 1975.
- Mishara, Joan W. "The Corrosion of Ancient Metals, Especially Bronzes." R. J. Gettens Memorial Seminar, March 21, 1975.
- Olin, Jacqueline S. "Chemistry in the Museum." Chemistry Department, University of Colorado, January 28, 1975.
- . "Neutron Activation Analysis of Majolica Ware: Specimens from Spanish-American Sites." Symposium on the Application of the Physical

- Sciences to the Study of Medieval Ceramics, University of California at Berkeley, March 20, 1975.
- Organ, Robert M. Conservation Orientation Series, numbers 1-20, October 17, 1974 through March 27, 1975.
- . "Principles of Conservation." Archival Administration students, Library Science Department, Catholic University, October 18, 1974.
- . "Practical Solutions to Providing a Stable Environment." Annual Meeting of Association for Preservation Technology, 1974.
- . "Science in the Preservation of Art." National Science Teachers Association, Annual Meeting, 1974.
- . "Problem-Solving at the Smithsonian." Scientific Advisory Committee of the Henry Francis du Pont Winterthur Museum, November 1, 1974.
- . "Acids in the Museum Environment," seminar. Students and staff of the Winterthur Program in the Conservation of Historic and Artistic Works, November 2, 1974.
- . "Science in the Service of Art." American Association for Advancement of Science Annual Meeting, January 30, 1975.
- . Series of twelve lectures. "Fundamentals of Conservation," course at International Center, Rome, Italy, April 19-27, 1975.
- . "Conservation in the Smithsonian." Smithsonian Associates, May 6, 1975.

SMITHSONIAN INSTITUTION LIBRARIES

- Fink, Eleanor. "Computers, Information Retrieval, and Art," ARLIS/NA Annual Conference, January 21, 1975.
- . "Computer Cataloging of Slide and Photograph Collections." "Slide Librarianship: A Contemporary Survey," sponsored by the School of Library Service, Columbia University, in cooperation with the Metropolitan Museum of Art and ARLIS/NA, New York, New York, May 5, 1975.
- Goodwin, Jack. "The 1411 Equivalency Exam; What It Is and What It Isn't." Federal Interagency Field Librarian's Workshop, Arlington, Virginia, October 1, 1974.
- Sloan, Elaine F. "Planning for OCLC—An Administrator's Point of View," University of Maryland, College of Library and Information Services, October, 1974.
- . "Sustaining Planned Change: The Implementation of MRAP," University of Maryland Library Staff Association, December, 1974.
- . "Current Issues in Library Management," University of Maryland, College of Library and Information Services, May, 1975.

PUBLIC SERVICE

ANACOSTIA NEIGHBORHOOD MUSEUM

- Kinard, John R. "Great Issues of the American Revolution—The Self Governing Community, Rights and Responsibilities," paper. Great Issues Task Force, D. C. Bicentennial Commission and Assembly, Washington D. C., March 25, 1975.
- . "Artistic Directions for the Black Arts." African Heritage Studies Association National Conference, Washington, D. C., April 5, 1975.
- . "A Reappraisal of the Role of the Professional in Contemporary Society." Smithsonian Institution Associates Resident Program, April 10, 1975.
- Martin Zora, and several staff members of the Museum's Education Depart-

ment. Lectures for the Air Force Phase Two Race Relations Training Program, twice weekly since August 1974.

DIVISION OF PERFORMING ARTS

Williams, Martin. Seminar in Jazz Criticism. Music Critics Association, Smithsonian Institution, Washington, D. C., Sept. 23 through Oct. 2, 1974.

———. *Jazz, Swing through Modern*, class. Smithsonian Associates, Washington, D. C.

———. "Some Problems in Jazz History and Musical Analysis," lecture. American Musicological Society, Washington, D. C., November 1, 1974.

———. "The Fundamentals of Jazz," lecture. Music Educators Conference, Catholic University, Washington, D. C., November 11, 1974.

———. "The Fundamentals of Jazz," lecture. American Studies Association, Brooklyn College, Brooklyn, New York, November 22, 1974.

———. "Jelly Roll Morton," lecture. Hunter College, New York, December 19, 1974.

———. "Three Solo Pianos," workshop. Museum of Natural History, Washington, D. C., January 5, 1975.

———. Interview, with Dizzy Gillespie, Museum of Natural History, Washington, D. C., March 9, 1975.

———. "Jazz and American Music," radio interview. Luncheon at the Kennedy Center, WGMS, April 23, 1975.

OFFICE OF SMITHSONIAN SYMPOSIA AND SEMINARS

Dillon, Wilton S. "Psychological Aspects of the Donor-Recipient Relationship." Foreign Service Institute, April 25, 1975.

———, participant. "History of the Idea of Religious Toleration and Freedom," seminar. Department of Religion, Columbia University, New York, May 6, 1975.

———, participant. Conference on Intercultural Transactions for the Future, East-West Culture Learning Institute, Honolulu, Hawaii, June 22–26, 1975.

RESIDENT ASSOCIATE PROGRAM

Solinger, Janet W., conference participant. "Program Priorities Task Force on Adult Education," Corporation for Public Broadcasting, Washington, D. C., September 1974.

———. Major address. Annual Meeting of Historic Homes Foundation, Inc., Louisville, Kentucky, October 9, 1974.

———. Major address. Annual Meeting of Grand Rapids Art Museum, Grand Rapids, Michigan, November 7, 1974.

———, consultant on continuing education for the McGraw-Hill Publishing Company, New York, April 1975.

———, developer, director, and leader. "Developing a Museum-Oriented Curriculum for Adults and Children," Office of Museum Programs, Smithsonian Institution, Washington, D. C., April 7–10, 1975.

———, speaker. Intern's Seminar, National Endowment for the Arts, Washington, D. C., April 22, 1975.

———, Trustee. Fine Arts Museum of the Women's Interart Center, New York, 1975.

———, Vice-Chairperson. Publications Committee, National University Extension Association, 1974.

APPENDIX 9. *Fellows and Guest Scholars of the Woodrow Wilson International Center for Scholars Since Its Inception, October 1970, Through June 1975*

Elena Aga-Rossi Sitzia
Austin Amisshah
R. P. Anand
R. Christian Anderson
German Arceniegas
Robert J. Art
William Bader
Malcolm Baldwin
Daniel Bardonnnet
Dennis L. Bark
Numan V. Bartley
M. Cherif Bassiouni
Coral M. Bell
Harry C. Blaney
Francois Bondy
Heraclio Bonilla
Stephen V. Boyden
Zeb Bradford, Jr.
Peter Braestrup
Edward D. Brown
Roland Brown
Roy Bryce-Laporte
Alastair Buchan
Lucius C. Cafilisch
Lynton K. Caldwell
Douglas Chalmers
Stanley Coben
Wayne Cole
Chester Cooper
Peggy Cooper
Luiz A. Costa-Pinto
Douglas M. Costle
William Crotty
Aaron L. Danzig
Richard Darman
Rajeshwar Dayal
Lewis A. Dexter
Martin Diamond
Rene Dubos
Roberto Etchepareborda

Jens Evensen
Vladimir A. Fedorovich
Marc Ferro
Alton Frye
Carlos Fuentes
Zewde Gabre-Sellassie
Jackson A. Giddens
John J. Gilligan
Ismet Giritli
Andrew Goodpaster
Lincoln Gordon
Jack P. Greene
Jules Gueron
Shiv Gupta
Barbara G. Haskel
Elizabeth H. Haskell
Ihab Hassan
Moritaka Hayashi
Denis Hayes
Ferdinand Hermens
Hazel Hertzberg
Godfrey Hodgson
Townsend Hoopes
Raymond Hopkins
Donald L. Horowitz
A. E. Dick Howard
Russell W. Howe
E. W. Seabrook Hull
Terry R. Hutchins
M. Shamsul Huq
Charles Hyneman
Vladimir Ibler
Grace Stuart Ibingira
Marian Irish
Lawrence Kaplan
George Kennan
Benedict J. Kerkvliet
Wilfrid F. Knapp
Albert W. Koers
Wilfrid L. Kohl

Friedhelm Kruger-Sprengel
Paul Grimley Kuntz
Sanford Lakoff
Robert E. Lane
Ruth Lapidoth
Hongkoo Lee
Joseph A. LeMay
Reynaldo M. Lesaca
Yuri N. Listvinov
John M. Logsdon
Stuart H. Loory
John L. McHugh
Harald Malmgren
Gerald J. Mangone
Jaro Mayda
Earl Mazo
Dennis and Donella Meadows
Donald E. Milsten
John Milton
Ezra Mishan
K. P. Misra
Christopher Mitchell
Patrick Morgan
James A. Moss
John Mudd
James A. Mulligan
Francis X. Murphy
Claire Nader
Takafusa Nakamura
Joan Nelson
Yves-Henri Nouailhat
Raimi Ojikutu
Mancur Olson
John Owen
Robert A. Packenham
Arvid Pardo
Choon-ho Park
Carole Watts Parsons
Longin Pastusiak
Neal Peirce
Amos Perlmutter
Michla Pomerance
Eugene Rabinowitch

Harry Rowe Ransom
P. S. Rao
Raja Rao
Brian Rapp
Earl Ravenal
George Reedy
Taylor Reveley
Elliot Richardson
Richard Rose
Jon Rosenbaum
Robert Rothstein
Peter H. Sand
Lewis C. Sellers
Harold I. Sharlin
Evgeny S. Shershnev
Thomas E. Skidmore
Zdenek J. Slouka
Henry Nash Smith
Jean E. Smith
Richard W. Smyser
Egon Sohman
Athelstan Spilhaus
Kurt R. Spillmann
William B. Spong, Jr.
Robert E. Stein
Julius Stone
Roland N. Stromberg
Hideo Takabayashi
Radomiro Tomic
Eugene Trani
Vernon Van Dyke
Peter Van Ness
Jorge A. Vargas
Kei Wakaizumi
Robert H. Walker
Donald Walsh
Alvin M. Weinberg
Edward Wenk, Jr.
David Wise
Karol Wolfke
Bertram N. Wyatt-Brown
Vitaly V. Zhurkin

APPENDIX 10. *Academic Appointments, 1974-1975*

Smithsonian Fellows pursue research problems in Smithsonian facilities and collections in collaboration with professional staff members.

SMITHSONIAN POSTDOCTORAL FELLOWS

Program in American and Cultural History

Kenneth J. Hagan, Ph.D., Claremont College. American naval diplomacy, 1845–1861, with Harold D. Langley, Department of National and Military History, from January 1, 1975, through June 30, 1975.

Bernard Mergen, Ph.D., University of Pennsylvania. Shipbuilding and shipbuilding labor, 1917–1933, with Melvin H. Jackson, Department of Industries, from March 1, 1975, through August 31, 1975.

Program in Anthropology

C. Adrian Heidenreich, Ph.D., University of Oregon. Study of Crow Indian culture and early plains ethnography, with John C. Ewers, Department of Anthropology, from August 15, 1974, through August 14, 1975.

Program in Astrophysics

John B. Hearnshaw, Ph.D., Australian National University. The abundances and nucleo-synthesis of copper and zinc in stars, with George B. Field, Smithsonian Astrophysical Observatory, from September 25, 1974, through September 24, 1976.

Frederick H. Seguin, Ph.D., California Institute of Technology. Theoretical studies of various aspects of the structure and stability of rotating astrophysical objects, with George B. Field, Smithsonian Astrophysical Observatory, from October 1, 1974, through September 30, 1976.

Program in Earth Sciences

Gary R. Byerly, Ph.D., University of Illinois. Textural variations of oceanic basalts, with William G. Melson, Department of Mineral Sciences, from September 1, 1974, through August 31, 1975.

Program in Environmental Sciences

Wolfgang P.J. Dittus, Ph.D., University of Maryland. The ecology and behavior of the toque monkey, *Macaca sinica* of Sri Lanka, with John F. Eisenberg, National Zoological Park, from October 15, 1974, through October 14, 1975.

Bronislaw Z. Drozdowicz, Ph.D., Cornell University. Genetic and biochemical analysis of light-induced phenomena in *Neurospora crassa*, with Roy W. Harding, Radiation Biology Laboratory, from September 1, 1974, through August 31, 1975.

Jessie S. Weistrop, Ph.D., University of Massachusetts. Protein synthesis in chloroplast membrane bound ribosomes, with Martin M. Margulies, Radiation Biology Laboratory, from October 1, 1974, through September 30, 1975.

Barbara A. Zilinskas, Ph.D., University of Illinois. Structure-function relationships of phycobilisomes, with Elisabeth Gantt, Radiation Biology Laboratory, from January 1, 1975, through December 31, 1975.

Program in Evolutionary and Systematic Biology

Raymond W. Bouchard, Ph.D., University of Tennessee. Taxonomy and systematics of some members of the crayfish genera *Cambarus* and *Orconectes* in the southeastern United States, with Horton H. Hobbs, Department of Invertebrate Zoology, from August 26, 1974, through August 25, 1975.

Judith E. Dudley, Ph.D., University of Chicago. Further studies on the feeding biology of marine ectoprocts, with Richard S. Boardman, Alan H. Cheetham, and Mary E. Rice, Department of Paleobiology and the Fort Pierce Bureau, from July 15, 1974, through July 14, 1975.

Theodore L. Esslinger, Ph.D., Duke University. Taxonomy and systematics of the lichen genus *Parmelia*, with Mason E. Hale, Department of Botany, from October 1, 1974, through September 30, 1975.

Richard R. Graus, Ph.D., University of Rochester. Computer modeling of coral growth, with Ian G. Macintyre, Department of Paleobiology, from September 1, 1974, through August 31, 1975.

Irving L. Kornfield, Ph.D., State University of New York, Stony Brook. Geographic variation and evolution in *Astronesthes indicus*, with Robert H. Gibbs, Department of Vertebrate Zoology, from November 1, 1974, through July 31, 1975.

Wojciech Pulawski, Ph.D., Wroclaw University, Poland. Monograph of the North American tachysphex, with Karl V. Krombein, from September 1, 1974, through August 31, 1975.

Steven J. Zehren, Ph.D., University of Chicago. The evolutionary relationships of zeiform fishes, with Stanley H. Weitzman, Department of Vertebrate Zoology, from October 1, 1974, through September 30, 1975.

Program in the History of Art

Douglas G. Adams, Th.D., Graduate Theological Union. Humor in popular religious lithographs of nineteenth-century America; social significance and artistic parallels, with Janet L. Flint, National Collection of Fine Arts, from September 1, 1974, through July 31, 1975.

David S. Traxel, Ph.D., University of California, Santa Cruz. The life and times of Rockwell Kent, with Garnett M. McCoy, Archives of American Art, from October 1, 1974, through September 30, 1975.

Program in the History of Science and Technology

Stanley Goldberg, Ph.D., Harvard University. The social character of science in Germany and America in the late nineteenth and early twentieth centuries, with Paul Forman, Department of Science and Technology, from January 1, 1975, through December 31, 1975.

John A. Hennings, Ph.D., University of California, Berkeley. History and development of chemistry in the United States during the nineteenth and twentieth centuries, with Jon B. Eklund, from January 1, 1975, through June 30, 1975.

Clifford M. Nelson, Ph.D., University of California, Berkeley. Fielding Bradford Meek, 1817–1876; a scientific biography, with Ellis L. Yochelson, Department of Paleobiology, from September 1, 1974, through August 31, 1975.

William J. Simon, Ph.D., City University of New York. The Ferreira expedition in Brasil and its contribution to Brazilian natural history in the late eighteenth century, with Audrey B. Davis, Department of Science and Technology, from January 1, 1975, through December 31, 1975.

Program in Tropical Biology

Richard G. Cooke, Ph.D., University of London. The paleoecology of the central provinces of Panama, with Olga Linares, Smithsonian Tropical Research Institute, and Clifford Evans, Department of Anthropology, from November 1, 1974, through October 30, 1975.

Douglas R. Diener, Ph.D., University of California, San Diego. A comparative study in the endocrine control of sex succession and dichromitism in the genus *Thalassoma*, with Jeffrey B. Graham, Smithsonian Tropical Research Institute, from January 1, 1975, through December 31, 1975.

Donald L. Kramer, Ph.D., University of British Columbia. Studies of the feeding behavior of detritus- and aufwuchs-feeding freshwater fishes, with Robert L. Dressler, Smithsonian Tropical Research Institute, from November 1, 1974, through September 30, 1975.

Robert R. Warner, Ph.D., University of California, San Diego. Studies on reproductive strategies of coral reef fishes, with Ira Rubinoff, Smithsonian Tropical Research Institute, from September 14, 1974 through August 14, 1975.

SMITHSONIAN PREDOCTORAL FELLOWS

Program in American and Cultural History

James A. Borchert, Ph.D. candidate, University of Maryland. American minigettos; alleys, alley dwellings, and alley dwellers in Washington, D.C., 1850–1970, with Wilcomb E. Washburn, Office of American Studies, from July 15, 1974, through July 14, 1975.

Shirley Hune, Ph.D. candidate, George Washington University. American attitudes to the Pacific migration; case study, the Chinese, with Roy S. Bryce-Laporte, Research Institute on Immigration and Ethnic Studies, from September 1, 1974, through August 31, 1975.

Mark Lindley, Ph.D. candidate, Columbia University. Organological factors bearing on the history of keyboard instruments, with John T. Fesperman and J. Scott Odell, Department of Cultural History, from April 1, 1974, through December 31, 1974.

Program in Anthropology

Avery M. Henderson, Ph.D. candidate, University of Colorado. Dental field theory; an application to human evolution, with Douglas H. Ubelaker, Department of Anthropology, from June 1, 1974, through May 31, 1975.

Robert D. Jurmain, Ph.D. candidate, Harvard University. The distribution of degenerative joint disease in skeletal populations, with Donald J. Ortner, from July 15, 1974, through July 14, 1975.

Robert F. Maslowski, Ph.D. candidate, University of Pittsburgh. A re-analysis of Frank M. Setzler's trans-Pecos Texas collection, with Waldo T. Wedel, Department of Anthropology, from September 1, 1974, through August 31, 1975.

Renato O. Rimoli, M.S. candidate, Universidad Autónoma de Santo Domingo. A study of the Gerrit S. Miller collection of fauna from archeological sites in Santo Domingo, 1925–1927, with Clifford Evans, Department of Anthropology, and Clayton E. Ray, Department of Paleobiology, from April 1, 1974, through June 30, 1975.

Program in Astrophysics

William M. DeCampi, Ph.D. candidate, Harvard University. A statistical mechanical approach to galactic dynamics, with A. G. W. Cameron, Smithsonian Astrophysical Observatory, from September 1, 1974, through May 31, 1975.

Robert W. Leach, Ph.D. candidate, Harvard University. High energy astrophysics, with Riccardo Giacconi, Smithsonian Astrophysical Observatory, from September 1, 1974, through May 31, 1975.

Robert S. Pariseau, Ph.D. candidate, Harvard University. Galactic dynamics and galactic evolution, with George Rybicki, Smithsonian Astrophysical Observatory, from September 1, 1974, through May 31, 1975.

Carleton R. Pennypacker, Ph.D. candidate, Harvard University. Infrared pulsar search astrophysics, with Costas Papaliolios, Smithsonian Astrophysical Observatory, from September 1, 1974, through May 31, 1975.

Kenneth P. Topka, Ph.D. candidate, Harvard University. Analysis of UHURU data of CYG X-3 and research on the HEAO-A modulation collimator, with Alexander Dalgarno, Smithsonian Astrophysical Observatory, from September 1, 1974, through May 31, 1975.

Ira M. Wasserman, Ph.D. candidate, Harvard University. Applications of weak interaction theory to astrophysical problems, with Stephen Weinberg, Smithsonian Astrophysical Observatory, from October 1, 1974, through May 31, 1975.

Program in Conservation

Sarah C. Riley, M.A. candidate, New York University. Problems in conservation with special emphasis on restoration of works of art on paper and related materials, with Robert M. Organ, Conservation and Analytical Laboratory, from July 15, 1974, through July 14, 1975.

Program in Environmental Sciences

A. Lang Elliott, Ph.D. candidate, University of Maryland. Food hoarding and its relation to hibernation in the eastern chipmunk, *Tamias striatus*, with John F. Eisenberg, National Zoological Park, from August 1, 1974, through July 31, 1975.

Victoria C. Guerrero, Ph.D. candidate, Howard University. The courtship and copulatory behavior of *Myoprocta pratti*, with Devra G. Kleiman, National Zoological Park, from April 1, 1974, through March 31, 1975.

Program in Evolutionary and Systematic Biology

William L. Fink, Ph.D. candidate, George Washington University. Evolution and systematics of the infraorder Photichthya, deep sea fishes, with Stanley H. Weitzman, Department of Vertebrate Zoology, from July 1, 1974, through June 30, 1975.

Peter R. Hoover, Ph.D. candidate, Case Western Reserve University. Paleontology, paleoecology, and taphonomy of the permocarboniferous Palmarito

Formation of the southwestern Venezuelan Andes, with Richard E. Grant, Department of Paleobiology, from September 1, 1974, through August 31, 1975.

Philip D. Perkins, Ph.D. candidate, University of Maryland. Biosystematics of the New World representatives of the aquatic beetle genera, *Hydraena* and *Limnebius*, with Paul J. Spangler, Department of Entomology, from May 1, 1974, through April 30, 1975.

Deva D. Tirvengadam, Ph.D. candidate, École Pratique des Hautes Études. Revision of tribes Gardeniinae, Guettardiinae, and Knoxiinae of the Rubiaceae for Sri Lanka, with Dr. F. Raymond Fosberg, Department of Botany, from December 15, 1974, through December 14, 1975.

Program in the History of Art

George Gurney, Ph.D. candidate, University of Delaware. Olin Levi Warner and his sculpture, with Lois M. Fink, National Collection of Fine Arts, from August 1, 1974, through July 31, 1975.

Marc H. Miller, Ph.D. candidate, New York University. The art associated with Lafayette's farewell tour of the United States, with Lois M. Fink, National Collection of Fine Arts, from July 1, 1974, through December 31, 1974.

Gerald D. Silk, Ph.D. candidate, University of Virginia. The image of the automobile in twentieth-century art, with Walter W. Hopps, National Collection of Fine Arts, July 1, 1974, through June 30, 1975.

Ann Yonemura, Ph.D. candidate, Princeton University. The Ishiyamadara Engi Emaki, with Thomas Lawton, Freer Gallery of Art, from September 1, 1974, through May 31, 1975.

Program in the History of Science and Technology

Roy S. Klein, Ph.D. candidate, Case Western Reserve University. Alexander L. Holley, his contributions to steelmaking and their impact on nineteenth-century American technology, with G. Terry Sharrer, Department of Industries, from July 15, 1974, through July 14, 1975.

Alice M. Quinlan, Ph.D. candidate, Johns Hopkins University. A history of the National Research Council, 1916-1936, with Nathan Reingold, from September 1, 1974, through August 31, 1975.

Philip T. Rosen, Ph.D. candidate, Wayne State University. The search for order; radio broadcasting in the 1920s, with Bernard S. Finn, Department of Science and Technology, September 1, 1974, through August 31, 1975.

Program in Tropical Biology

Kenneth L. Heck, Ph.D. candidate, Florida State University. A tropical-temperate comparison of community structure in estuarine grass bed areas, with Ira Rubinoff, Smithsonian Tropical Research Institute, from July 1, 1974, through June 30, 1975.

Catherine A. Toft, Ph.D. candidate, Princeton University. Niche overlap and competition for food in a community of frogs in Panama, with Egbert G. Leigh, Smithsonian Tropical Research Institute, from September 1, 1974, through August 31, 1975.

UNDERGRADUATE RESEARCH STUDENTS

The following students pursued research supported by a grant from the National Science Foundation's Undergraduate Research Participation Program, Grant GY9734 in Geological Sciences.

Alan H. Cutler, Carleton College. Studies in invertebrate paleontology with Richard E. Grant, Department of Paleobiology.

Kraig L. Derstler, Franklin and Marshall College. Studies in invertebrate paleontology with Ellis L. Yochelson, Department of Paleobiology.

James W. Westgate, College of William and Mary. Miocene and Pliocene marine mammals with Clayton E. Ray, Department of Paleobiology.

GRADUATE RESEARCH STUDENTS

Program in American and Cultural History

Gloria A. Johnson, Duke University. Studies of migration from the American Virgin Islands to the United States, with Roy S. Bryce-Laporte, Research Institute on Immigration and Ethnic Studies.

George W. McDaniel, Duke University. Studies of American material culture, with Wilcomb E. Washburn, Office of American Studies.

Program in Anthropology

Mitchell S. Rothman, Hunter College. Archaeological research on chipped stone implements, with William W. Fitzhugh, Department of Anthropology.

Sara J. Wolf, George Washington University. Training in ethnographic and archeological conservation, with Bethune M. Gibson, Department of Anthropology.

Program in Environmental Sciences

Richard A. Kiltie, Yale University. Study of breeding behavior of African antelopes, with Helmut K. Buechner, National Zoological Park.

Program in Evolutionary and Systematic Biology

Anne E. Hoffman, University of Oregon. Study of the distribution and ecology of African game mammals, with Henry W. Setzer, Department of Vertebrate Zoology.

Arthur G. Lavallee, University of Georgia. A study of *Empis* specimens, with Richard W. Baumann, Department of Entomology.

Kathleen Munthe, University of California, Berkeley. Research on the musculature of *Crocuta*, the spotted hyena, with Richard W. Thorington, Department of Vertebrate Zoology.

John B. Randall, University of Florida. Studies in entomological illustration, with Lawrence M. Druckenbrod, Department of Entomology.

Thomas J. Trumpler, Art Center College of Design, California. Study of techniques of vertebrate fossil restoration, with Nicholas Hotton, Department of Paleobiology.

Program in the History of Art

Roslye R. Ultan, American University. Study of nineteenth- and twentieth-century women artists, with Cynthia J. McCabe, Hirshhorn Museum and Sculpture Garden.

Program in the History of Science and Technology

Jane A. Maienschein, Indiana University. Study of historical medical instruments, with Audrey B. Davis, Department of Science and Technology.

Stephen J. Pyne, University of Texas. Research on a biography of the American geologist, Grove Karl Gilbert, with Nathan Reingold, Joseph Henry Papers.

John B. Schmitt, University of Pennsylvania. Research on artifacts pertaining to Elihu Thomson and his electrical engineering work in the late nineteenth century, with Bernard S. Finn, Department of Science and Technology.

SMITHSONIAN COOPERATIVE STUDENTS

Richard LeBaron, George Washington University. Research on methodological evolution of NASA's technology utilization program, with Paul A. Hanle, National Air and Space Museum.

James Maloney, George Washington University. Research on the economics of technological change, with Paul A. Hanle, National Air and Space Museum.

MUSEUM STUDY STUDENTS

Amy Aotaki, University of California, Davis. Investigation of pathogenic bacteria in the Chesapeake Bay area, with Maria A. Faust, Chesapeake Bay Center for Environmental Studies.

Kimberly Baer, University of California, Santa Cruz. Work on preparations before and during the Festival of American Folklife, with Suzanne Roschwab, Division of Performing Arts.

Mary Balicki, American University. Study of motifs used on American military insignia during the nineteenth century, with Donald E. Kloster, Department of National and Military History.

Lucy Commoner, Rhode Island School of Design. Identification and analysis of woven textiles, with Milton F. Sunday, Cooper-Hewitt Museum of Design.

Sarah Cornwall, William Smith College. Coordinating the new children's area for the Festival of American Folklife, with Suzanne Roschwab, Division of Performing Arts.

Catherine Corum, University of Kentucky. Coordinating photographs, text, and craft objects in Mississippi exhibit for Festival of American Folklife, with Peggy A. Martin, Division of Performing Arts.

Lauren Donner, Beloit College. Exhibit work especially silk screening, with Benjamin W. Lawless, Department of Exhibits.

Lynne Isbell, University of Redlands. Observation of the Indian rhinoceros in captivity, with Helmut K. Buechner, National Zoological Park.

Deanne Johns, University of Delaware. General curatorial tasks in the Division of Textiles, with Rita J. Adrosko, Department of Applied Arts.

Samuel McMillan, New College, Sarasota. Research and study involving all phases of photographic techniques, with Henry A. Alexander, Division of Photographic Services.

Kent Redford, University of California, Santa Cruz. Research and study involving the preparation of mammals for museum study, with Richard W. Thorington, Department of Vertebrate Zoology.

Louise Roth, Brown University. Work on the Marine Mammal Program in the Department of Vertebrate Zoology, with James G. Mead, Department of Vertebrate Zoology.

Robert A. Ruhl, Grinnell College. Work in the instrument restoration shop, the music patent library, tuning instruments, and giving performances, with John T. Fesperman, Department of Cultural History.

Mary Scott, University of Virginia. Study on a practical level of the workings of an educational organization within a museum, with Carolyn A. Hecker, Smithsonian Associates.

Oren Screebny, Fairhaven College. Work with films and slides of the Festival of American Folklife to put together shows featuring various segments of the Festival, with Suzanne Roschwalb, Division of Performing Arts.

John Sheehan, University of California at Davis. Library research on nineteenth-century mathematicians, with Uta C. Merzbach, Department of Science and Technology.

Gordon Uno, University of California. General research for the Museum of Natural History Bicentennial exhibit, with George R. Zug, Department of Vertebrate Zoology.

Wanda Walker, University of Idaho. Archival studies relating to the Festival of American Folklife, 1974, 1975, with Suzanne Roschwalb, Division of Performing Arts.

Cherilyn E. Widell, Hood College. Recipient of the Elsie Shaver Scholarship to study, organize, and preserve the correspondence of Dorothy Shaver, with Claudia B. Kidwell, Department of Cultural History.

Cheryl Yuen, University of California. Computer cataloguing and analysis of Joseph Henry's personal papers, with Arthur P. Molella, Joseph Henry Papers.

SECRETARY'S OFFICE AND RELATED ACTIVITIES

THE SECRETARY	S. DILLON RIPLEY
Executive Assistant	Dorothy Rosenberg
Under Secretary	Robert A. Brooks
Administrative Officer	John Motheral
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Director, Office of Audits	Chris S. Peratino
Assistant Secretary for Science	David Challinor
Assistant Secretary for History and Art .	Charles Blitzer
Assistant Secretary for Public Service ...	Julian T. Euell
Assistant Secretary for Museum Programs (Director, United States National Mu- seum Act)	Paul N. Perrot
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Assistant Treasurer (Accounting)	Betty J. Morgan
Assistant Treasurer (Programming and Budget)	John F. Jameson
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Director, Belmont Conference Center ...	Joanne S. Baker Kugel
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Assistant General Counsels	Alan D. Ullberg
	George S. Robinson
	Suzanne D. Murphy
	Marie C. Malaro
Director of Support Activities	Richard L. Ault
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Special Assistant to the Secretary	Richard H. Howland
Special Assistant to the Secretary	Margaret Gaynor
Director, Office of Membership and Development	Lawrence E. Laybourne
Editor, Joseph Henry Papers	Nathan Reingold
Director, Office of Equal Opportunity ...	Archie D. Grimmett
Curator, Smithsonian Institution Building	James M. Goode
Honorary Research Associates	Alexander Wetmore, Secretary Emeritus
	Paul H. Oehser

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Deputy Assistant Secretary	Michael R. Huxley
Executive Officer	Harold J. Michaelson

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Program Coordinator	Sam Stanley
Director, Research Institute for Immigration and Ethnic Studies	Roy Bryce-Laporte
Director, National Anthropological Film Center	E. Richard Sorenson

CHESAPEAKE BAY CENTER FOR ENVIRONMENTAL STUDIES

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Associate Director for Education	John H. Falk
Administrative Officer	Donald L. Wilhelm
Facilities Manager	Robert E. Ayers
<i>Scientific Staff:</i>	
Gary R. Chirlin	Patricia Mehlhop
Robert L. Cory	Joseph J. Miklas
Maria A. Faust	Shiela D. Minor
Elaine S. Friebele	R. William Schaffner
Nancy M. Goff	Robert J. Simpson
Daniel L. Higman	Linda L. Szaloczi
James F. Lynch	Tung Lin Wu
<i>Education and Information:</i>	
G. Marjorie Beane	David P. Miller
Sally A. Gucinski	M. Lynne Mormann

FORT PIERCE BUREAU

Director	H. Adair Fehlmann
Principal Investigator of Indian River Study	David K. Young
Administrative Assistant	Carolyn S. Zealand
<i>Scientific Staff:</i>	
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Embryologist/Life Histories	Mary E. Rice
Biologists	Linda J. Becker
	Betsy Brown
	Stephen A. Dudley
	George R. Kulczykcki
	John E. Miller
Smithsonian Fellowship	Judith E. Dudley
Collaborator	Martha W. Young

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Assistant Director	Donald S. Lopez
<i>Department of Astronautics</i>	
Assistant Director	F. C. Durant III

<i>Department of Science and Technology</i>	
Assistant Director	Howard Wolko
<i>Center for Earth and Planetary Studies</i>	
Research Director	Dr. Farouk El-Baz
<i>Presentations and Educational Division</i>	
Chief	Von Del Chamberlain
<i>Exhibits Division</i>	
Chief	Francis A. Baby
Chief, Audiovisual Unit	Hernan Otano
Chief, Design Unit	Robert Widder
Chief, Illustration Unit	Peter Copeland
Chief, Production Unit	Frank Nelms
<i>Preservation, Restoration, and Storage Division</i>	
Chief	Donald Merchant
<i>Library Branch</i>	
Librarian	Catherine D. Scott
Buildings Coordinator	Joseph L. Davisson

NATIONAL MUSEUM OF NATURAL HISTORY

Director	Porter M. Kier
Assistant Director	James F. Mello
Staff Assistant to Director	Robert D. Seabolt ¹
Staff Assistant to Director	C. Willard Hart ²
Chief of Exhibits	Harry T. Hart
Coordinator, Office of Education	Joan C. Madden
Chief, ADP Program	T. Gary Gautier
Building Manager	Donald L. Case
Administrative Officer	John C. Townsend

ANTHROPOLOGY

Chairman	William W. Fitzhugh
Senior Archeologist	Waldo R. Wedel
Senior Ethnologists	John C. Ewers
	Saul H. Riesenber
Archivist	Herman J. Viola
Collections Manager	George E. Phebus
<i>Latin American Anthropology</i>	
Curator	Clifford Evans
Associate Curators	William H. Crocker
	Robert M. Laughlin
<i>Old World Anthropology</i>	
Curators	Gordon D. Gibson
	Gus W. Van Beek
	Eugene I. Knez
	William B. Trousdale
<i>North American Anthropology</i>	
Curator	William C. Sturtevant
Associate Curators	William W. Fitzhugh
	Dennis M. Stanford

¹ Appointed September 8, 1974.

² Appointed May 25, 1975.

Physical Anthropology

Curator	J. Lawrence Angel
Associate Curators	Donald J. Ortner Lucile E. St. Hoyme Douglas H. Ubelaker
Research Associates, Collaborators, and Affiliated Scientists:	
Hans-Georg Bandi (Archeology)	Michael Lieberman (Physical Anthropology)
W. Montague Cobb (Physical Anthropology)	Betty J. Meggars (Archeology)
T. Aidan Cockburn (Physical Anthropology)	George S. Metcalf (Archeology)
Henry B. Collins (Archeology)	Walter G. Putschar (Physical Anthropology)
Wilson Duff (Ethnology)	Victor A. Nunez Regueiro (Archeology)
Don D. Fowler (Archeology)	Owen Rye (Archeology)
Sister Inez Hilger (Ethnology)	Wilhelm G. Solheim (Archeology)
C. G. Holland (Archeology)	T. Dale Stewart (Physical Anthropology)
Neil M. Judd (Archeology)	Mildred Mott Wedel (Archeology & Ethnohistory)
Richard T. Koritzer (Physical Anthropology)	Theodore A. Wertime (Archeology)
Ralph K. Lewis (Archeology)	

BOTANY

Chairman	Edward S. Ayensu
Senior Botanist	Richard S. Cowan Lyman B. Smith ³
<i>Phanerogams</i>	
Curators	F. Raymond Fosberg John J. Wurdack Dan H. Nicolson Robert W. Read Marie-Helene Sacht Stanwyn G. Shetler Beryl B. Simpson Laurence E. Skog Dieter C. Wasshausen
Associate Curators	
<i>Ferns</i>	
Associate Curator	David B. Lellinger
<i>Grasses</i>	
Curator	Thomas R. Soderstrom
<i>Cryptogams</i>	
Curators	Mason E. Hale, Jr. Harold E. Robinson
<i>Palynology</i>	
Associate Curator	Joan W. Nowicke
<i>Plant Anatomy</i>	
Curators	Edward S. Ayensu Richard H. Eyde
Research Associates, Collaborators, and Affiliated Scientists:	
Paul S. Conger (Diatomaceae)	James A. Duke (Flora of Panama)
José Cuatrecasas (Flora of Tropical South America)	Marie L. Farr (Fungi) Aaron Goldberg (Phanerogams)

³ Retired September 30, 1974.

Research Associates, Collaborators, and Affiliated Scientists—Cont.

Charles R. Gunn (Seeds)	Lyman B. Smith (Flora of Brazil)
William H. Hathaway (Flora of Central America)	Marie L. Solt (Melastomataceae)
Paul L. Lentz (Fungi)	Frans A. Stafleu (Phanerogams)
Elbert L. Little, Jr. (Dendrology)	William L. Stern (Plant Anatomy)
Alicia Lourteig (Neotropical Botany)	John A. Stevenson (Fungi)
Kittie F. Parker (Compositae)	Edward E. Terrell (Phanerogams)
Clyde F. Reed (Ferns)	Francis A. Uecker (Fungi)
James L. Reveal (Ferns)	Egbert H. Walker (Myrsinaceae, East Asian Flora)
Velva E. Rudd (Leguminosae)	

ENTOMOLOGY

Chairman	Paul D. Hurd, Jr.
Collections Manager	Gary F. Hevel
Senior Entomologists	J. F. Gates Clarke ⁴
	Karl V. Krombein
<i>Neuropteroids and Diptera</i>	
Curator	Oliver S. Flint, Jr.
Associate Curator	Richard W. Baumann ⁵
<i>Lepidoptera</i>	
Curators	Donald R. Davis
	W. Donald Duckworth
Associate Curator	William D. Field
<i>Coleoptera</i>	
Associate Curators	Terry L. Erwin
	Paul J. Spangler
<i>Hemiptera</i>	
Associate Curator	Richard C. Froeschner
<i>Myriapoda and Arachnida</i>	
Curator	Ralph E. Crabill, Jr.
Research Associates, Collaborators, and Affiliated Scientists:	
Charles P. Alexander (Diptera)	W. L. Jellison (Siphonaptera, Anoplura)
Doris H. Blake (Coleoptera)	Harold F. Loomis (Myriapoda)
Franklin S. Blanton (Diptera)	C. F. W. Muesebeck (Hymenoptera)
Frank L. Campbell (Insect Physiology)	George W. Rawson (Lepidoptera)
Oscar L. Cartwright (Coleoptera)	Mary Livingston Ripley (General Entomology)
J. F. Gates Clarke (Lepidoptera)	Robert Traub (Siphonaptera)
K. C. Emerson (Mallophaga)	David Wooldridge (Coleoptera)
John G. Franclemont (Lepidoptera)	Hayo H. W. Velthuis (Hymenoptera)
Harry Hoogstraal (Medical Entomology)	

INVERTEBRATE ZOOLOGY

Chairman	David L. Pawson
Senior Zoologists	Fenner A. Chace, Jr.
	Horton H. Hobbs, Jr.
	Harald A. Rehder

⁴ Retired February 27, 1975, and appointed Research Associate March 1, 1975.

⁵ Resigned June 17, 1975.

Crustacea

Curators	J. Laurens Barnard Thomas E. Bowman Roger F. Cressey Louis S. Kornicker Raymond B. Manning
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Echinoderms

Curators	David L. Pawson Meredith L. Jones Marian H. Pettibone
Associate Curator	Mary E. Rice

Mollusks

Curators	Clyde F. E. Roper Joseph Rosewater
Associate Curator	Joseph P. E. Morrison
Visiting Curators	Michel de Saint Laurent Frederick Bayer ⁶

Research Associates, Collaborators, and Affiliated Scientists:

Frederick M. Bayer (Echinoderms)	Roman Kenk (Worms)
S. Stillman Berry (Mollusks)	J. Ralph Lichtenfels (Worms)
Janet Bradford (Crustacea)	Patsy McLaughlin (Crustacea)
J. Bruce Bredin (Biology)	Anthony J. Provenzano, Jr. (Crustacea)
Isabel C. Canet (Biology)	Waldo L. Schmitt (Marine Invertebrate)
Ailsa M. Clark (Echinoderms)	Frank R. Schwengal (Mollusks)
Elisabeth Deichmann (Echinoderms)	I. G. Sohn (Crustacea)
Mary Gardiner (Echinoderms)	Donald F. Squires (Echinoderms)
John C. Harshbarger (Marine Invertebrates)	Gilbert L. Voss (Mollusks)
Lipke B. Holthuis (Crustacea)	Austin B. Williams (Crustacea)

MINERAL SCIENCES

Chairman	William G. Melson
Mineralogist	George S. Switzer ⁷
Collections Manager	Harold H. Banks, Jr.

Meteorites

Curators	Roy S. Clarke, Jr. Brian H. Mason
Geochemists	Kurt Fredriksson Robert Fudali

Mineralogy

Curator	Paul E. Desautels
Associate Curator	John S. White, Jr.
Crystallographers	Daniel E. Appleman

Petrology and Volcanology

Curator	Thomas E. Simkin
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Physical Sciences Laboratory

Chemists	Eugene Jarosewich Joseph A. Nelen
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⁶ Appointed June 2, 1975.

⁷ Retired June 20, 1975.

Research Associates, Collaborators, and Affiliated Scientists:

Howard J. Axon (Meteorites)	Peter Leavens (Mineralogy)
Vagn F. Buchwald (Meteorites)	T. R. McGetchin (Petrology)
Tomas Feininger (Petrology)	Rosser Reeves (Mineralogy)
John J. Gurney (Petrology)	Arthur Roe (Mineralogy)
Edward P. Henderson (Meteorites)	Geoffrey Thompson (Petrology)
John B. Jago (Mineralogy)	Harry Winston (Mineralogy)
William C. Buell IV (Volcanology)	

PALEOBIOLOGY

Chairman	Richard E. Grant
Collections Manager	Frederick J. Collier

Invertebrate Paleontology

Curators	Richard M. Benson
	Richard S. Boardman
	Martin A. Buzas
	Alan H. Cheetham
	Richard Cifelli
	Richard E. Grant
	Erle G. Kauffman
	Thomas R. Waller
Geologist	Kenneth M. Towle

Vertebrate Paleontology

Curators	Nicholas Hotton III
	Clayton E. Ray
Associate Curator	Robert J. Emry

Paleobotany

Curator	Walter H. Adey
Associate Curators	Leo J. Hickey
	Francis M. Hueber

Sedimentology

Curator	Jack W. Pierce
Geological Oceanographer	Daniel J. Stanley
Geologist	Ian G. Macintyre

Research Associates, Collaborators, and Affiliated Scientists:

Patricia Adey	Venka V. Macintyre
Arthur J. Boucot	Sergius H. Mamay
David Child	James F. Mello
Anthony C. Coates	Robert B. Neuman
G. Arthur Cooper	William A. Oliver, Jr.
Raymond Douglass	Storrs L. Olson
J. Thomas Dutro	Axel A. Olsson
Douglas Emlong	Thomas F. Phelen
Robert M. Finks	John Pojeta, Jr.
C. Lewis Gazin	Charles A. Repenning
Mackenzie Gordon, Jr.	Frederic R. Siegel
Joseph E. Hazel	Norman F. Sohl
John W. Huddle	Steven M. Stanley
Ralph W. Imlay	Margaret Ruth Todd
Jeremy B. C. Jackson	Frank C. Whitmore, Jr.
Gilbert Kelling	John W. Wilson
Harry S. Ladd	Astrid Witmer
N. Gary Lane	Wendell P. Woodring
Kenneth E. Lohman	Ellis P. Yochelson

VERTEBRATE ZOOLOGY

Chairman	Robert H. Gibbs, Jr.
<i>Fishes</i>	
Curators	Robert H. Gibbs, Jr. Ernest A. Lachner Victor G. Springer Stanley H. Weitzman William R. Taylor
Associate Curator	William R. Taylor
<i>Reptiles and Amphibians</i>	
Associate Curators	W. Ronald Heyer George R. Zug
<i>Birds</i>	
Curators	George E. Watson Richard L. Zusi
Associate Curators	Paul Slud Storrs Olson ^s
<i>Mammals</i>	
Curators	Charles O. Handley, Jr. Henry W. Setzer
Associate Curator	Richard W. Thorington, Jr.
Assistant Curator	James G. Mead
Research Associates, Collaborators, and Affiliated Scientists:	
John W. Aldrich (Birds)	George J. Jacobs (Reptiles, Amphibians)
Ronald Gail Altig (Reptiles, Amphibians)	Frances C. James (Birds)
Richard C. Banks (Birds)	Clyde J. Jones (Mammals)
William Belton (Birds)	E. V. Komarek (Mammals)
Michael A. Bogan (Mammals)	Roxie C. Laybourne (Birds)
James P. Bogart (Reptiles, Amphibians)	J. A. J. Meester (Mammals)
James E. Böhlke (Fishes)	Egardo Mondolfi (Mammals)
Robert L. Brownell, Jr. (Mammals)	Russell E. Mumford (Mammals)
Howard W. Campbell (Reptiles, Amphibians)	Storrs L. Olson (Birds)
Daniel M. Cohen (Fishes)	Braulio Orejas-Miranda (Reptiles)
Bruce B. Collette (Fishes)	John Paradiso (Mammals)
Sara L. Demott (Mammals)	William F. Perrin (Mammals)
Robert K. Enders (Mammals)	Dioscoro S. Rabor (Birds)
Carl H. Ernst (Reptiles, Amphibians)	Rudolfo Ruibal (Reptiles, Amphibians)
Herbert Friedmann (Birds)	G. Carleton Ray (Mammals)
Jefferey Froehlich (Mammals)	S. Dillon Ripley (Birds)
Alfred L. Gardner (Mammals)	William Schevill (Mammals)
Crawford H. Greenewalt (Birds)	Leonard P. Schultz (Fishes)
Arthur M. Greenhall (Mammals)	Stephen G. Tilley (Reptiles, Amphibians)
Richard Highton (Reptiles, Amphibians)	John C. Weske (Birds)
Marshall A. Howe (Birds)	Alexander Wetmore (Birds)
Philip S. Humphrey (Birds)	Ralph E. Wetzel (Mammals)
Crawford G. Jackson, Jr. (Reptiles, Amphibians)	Don E. Wilson (Mammals)
	Richard D. Worthington (Reptiles, Amphibians)

^s Appointed February 24, 1975.

SMITHSONIAN OCEANOGRAPHIC SORTING CENTER

Director, SOSOC	Betty J. Landrum
Director, Mediterranean Marine Sorting Center	Ernani G. Menez

NATIONAL ZOOLOGICAL PARK

Director	Theodore H. Reed
Deputy Director	Edward Kohn
Assistant Director for Conservation	John Perry
Assistant Director for Visitor Services	Warren J. Iliff
Chief, Office of Education and Information	Judith White
Chief, Office of Graphics and Exhibits ...	Robert E. Mulcahy
Chief, Office of Protective Services	Joseph J. McGarry
Captain, NZP Police	Samuel L. Middleton, Jr.
Chief, Health and Safety Unit	Anthony S. Kadlubowski
General Curator, Office of Animal Management	Jaren G. Horsley
Associate Curator, North Mammal Unit	Larry R. Collins
Curator, Central Mammal Unit	William A. Xanten, Jr.
Assistant Curator, South Mammal Unit	Miles S. Roberts
Curator, Birds Unit	Guy A. Greenwell
Assistant Curator, Reptiles Unit	Michael L. Davenport
Chief, Commissary and Support Unit	Moses Benson
Scientist-in-Charge, Office of Zoological Research	John F. Eisenberg
Chief, Office of Animal Health	Mitchell Bush
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⁹ Resigned c.o.b. June 30, 1975.

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¹⁰ Resigned June 26, 1975.

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¹¹ Resigned November 29, 1974.

¹² Resigned February 21, 1975.

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¹³ Transferred to Eisenhower Institute, NMHT, June 8, 1975.

¹⁴ Transferred to National Collection of Fine Arts, June 22, 1975.

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	Elvira Clain-Stefanelli

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	Reidar Norby

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† Deceased June 30, 1975.

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¹⁵ Appointed January 6, 1975.

¹⁶ Resigned March 31, 1975.

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¹⁷ Appointed February 2, 1975.

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¹⁸ Appointed June 1, 1975.

¹⁹ Appointed January 6, 1975.

²⁰ Appointed April 6, 1975.

²¹ Appointed April 13, 1975.

²² Appointed May 21, 1975.

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²³ Deceased August 10, 1975.

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This body was created in October 1971 to assist the Institution in the pursuit of certain of its aims for the decade of the 1970s, particularly in the development of its relations with industry. While the Institution hopes to advance its goals in public education and environmental studies through increased private support, it seeks, in turn, to serve the educational and community interests of its Corporate Members. We are grateful for the energy and concern shown by the members of the Board.

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APPENDIX 13. *List of Donors to the Smithsonian Institution in Fiscal Year 1975*

The Board of Regents and the Secretary of the Smithsonian Institution join with the entire staff in thanking all of the Institution's friends for their generous financial support and for their gifts to the collections. If perchance the name of any donor has been omitted from the following list, it is an inadvertence and in no way diminishes the Institution's gratitude. Many gifts were received from donors who prefer to remain anonymous; the Smithsonian wishes to thank them for their generosity.

OFFICE OF THE SECRETARY

SPECIAL PROJECTS

Donors to the Furnishings Collection

Bruce, The Honorable David K.E., Brussels, Belgium: English sideboard.
Caldwell, Mrs. Gibson L., Wheeling, West Virginia: two Italian lace tablecloths.

Feldman, Joseph G., Philadelphia, Pennsylvania: Empire fall-front desk.

Foote, Dr. William D., Chevy Chase, Maryland: glass chandelier.

Ford, Mrs. Frederick, Alexandria, Virginia: plaster bust of George Washington after Houdon.

Kerr, Mrs. John Morrison, Washington, D.C.: Eastlake secretary.

McClellan, Miss Blanche, Mexico City, Mexico: mantle mirror.

Prescott, Mr. and Mrs. John S., Jr., Washington, D.C.: Rococo Revival sofa.

Tillett, James, St. Thomas, Virgin Islands: silkscreen print.

Wang Chi-Yuan, New York, New York: Oriental scroll painting.

Weppner, Mrs. Robert A., Chevy Chase, Maryland (from estate of Mrs. Ava Maguire): pair Renaissance Revival side tables, Renaissance Revival table, bronze bust of Abraham Lincoln by Gutzon Borglum, pedestal desk, two brass table lamps, Empire sofa, Lincoln-style rocker.

SCIENCE

CENTER FOR THE STUDY OF MAN, NATIONAL ANTHROPOLOGICAL FILM CENTER

Donors of Financial Support

Institute for Intercultural Studies: \$6,000 for the development of the National Anthropological Film Center.

National Endowment for the Humanities: (a) \$91,724 for first-year support of a Film Center to serve as a research resource for humanistic scholarship.
(b) \$72,788 in support of A Film Record of the Pashtoon People of Afghanistan.

National Geographic Society: \$17,714 in support of A Research Film Study of Traditional Cook Island Polynesian Dance.
 National Institutes of Health: \$103,725 to initiate the National Anthropological Film Center.
 Marshall, Mr. Laurence K.: \$3,000 in support of a project to obtain annotation of film footage of the !Kung Bushmen by the subjects of the film.
 Waletzky, Dr. and Mrs. Jeremy P.: \$15,142.75 for the development of the National Anthropological Film Center.
 WGBH Public Broadcasting, Boston: \$5,000 in support of A Film Record of the Pashtoon People of Afghanistan.

Donors to the Collections

FILM DEPOSITS

American Universities Field Staff: 84,800 feet of research film prints from its Afghanistan and Bolivian film projects, and later accessioning rights to some 42,000 feet from its Kenya, China Coast, and Taiwan projects.
 National Institutes of Health: Approximately 75,000 feet of film from research projects by Dr. Sorenson in New Guinea, the Western Caroline Islands and Micronesia, the New Hebrides, and Mexico. Approximately 40,000 feet of film on traditional Melanesian cultural survivals in the New Hebrides taken by Dr. Kal Muller.
 Muller, Dr. Kal: 42,000 feet of research film on naturally occurring human behavior in relation to cultural organization among the Huichol Indians of Mexico.

FILMS OFFERED FOR ACCESSIONING

Some 750,000 feet of research film footage from:
 Timothy Asch's film on the Yanomamo Indians of southern Venezuela
 David MacDougall's film footage on the Turkana, Jie, and Boran tribes in Kenya
 John K. Marshall's footage on the !Kung Bushmen of South Africa
 Margaret Mead's films from expeditions to New Guinea and Bali

NATIONAL AIR AND SPACE MUSEUM

Donors to the Collections

Brooks, Miss Kathleen: Air navigation instruments.
 Burden, Mr. William A. M.: Eighteenth-century French furniture, china, and objets d'art with balloon motif.
 Calvins, Dr. C. S.: Strut from crashed Lindbergh DH-4.
 Connecticut, University of: Gnome rotary engine (Model N). Doolittle, Lt. Gen. J. H.: *Tokyo Raid*, painting by Ferris; Wings of Man Trophy; bomb fragment from the Tokyo raid; "Footprints on the Sands of Time" Medal.
 Lipman, Mr. Eric M.: World War II German insignia and documents.
 Machado, Mrs. Anesia Panheiro: Sculpture of Alberto Santos-Dumont.
 McCray, Mrs. Helen: Schweizer 2-22 Sailplane.
 McGregor, Mr. Robert G.: *We at Daybreak*, painting by Pfister.
 Planes of Fame (Ed Malony): Consolidated B-24 nose section.
 Rickenbacker, Estate of Captain Edward (through Marguerite Shepard): Drawings and photographs.
 Seversky, Estate of Major Alexander P. de (through Mrs. Mary E. Bourne, executrix): Memorabilia, paintings, photos, and books.
 United States Navy: Sikorsky UH-34C (Helicopter); Douglas A4C (Attack Plane).

Uruguay, Air Force and Navy of (through U.S. Air Attaché): Uruguayan wings and insignia.

NATIONAL MUSEUM OF NATURAL HISTORY

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INDIVIDUALS

Abbott, Mrs. Robert O., Jr., and Downs, Mrs. Frederick R., Jr.: black opal and gold lavalier (310942).

Ainley, Dr. David G.: 20 bird skeletons (315585, exchange).

Akingbohunge, Dr. A.: 2 plant bugs (313321).

Alcorn, Mr. and Mrs. Keith: 1 magnetite (313074).

Alkire, William H.: 2 basketry pouches, Micronesia (313316).

Allyn, Arthur: 31,282 moths, Mexico (315240).

Anderson, Dr. N. H.: 1 caddisfly, Oregon (312709).

Andersson, Dr. Hugo: 2 flies, Iceland (313693).

Armonia, Mrs. Patricia Liu: 19 women's garments, China (313317).

Arrowood, G. T.: 1 huntite, Oregon (313976).

Arrowood, Ted: 1 garnierite, Oregon (312892).

Ash, Dr. Sidney R.: 16 paleobotanical slide preparations, Arizona (312710).

Averell, James L.: 1 burden basket, Yurok Indian (313318).

Bacon, Mrs. Eva D. (see Dingman, Johnson).

Bacon, Dr. Peter R.: 14 polychaetes, West Indies (310924).

Baker, Dr. Alan N.: 1 echinoderm, New Zealand (312347).

Baker, James H.: 336 butterflies, 532 flies (311700, 313683); 65 caddisflies 57 moths (315092, 315232).

Baker, Dr. P. G.: 88 fossil brachiopods (310919, 312350).

Balk, Dr. Christina L.: 59 trilobites, Missouri (311271).

Ball, Dr. George E.: 117 centipedes (314056, 315239); 39 ground beetles (315219, 316270, 316285).

Balsbaugh, Dr. E. U.: 2 beetles, North America (311990).

Baranowski, Dr. Richard M.: 2 squash bugs (316308).

Barker, Mrs. Pat: 16 minerals, Germany (311952).

Barnard, Dr. J. L.; Dawson, Y. E.; and California, University of: 14,273 crustaceans (260778).

Barnett, Dr. Douglas E.: 137 cicadas, Kentucky (312018).

Barr, Dr. Thomas C., Jr.: 155 ground beetles (316291).

Barr, Dr. W. F.: 80 beetles (314058, 316558).

Bartsch, Dr. Paul: 1 basketry container, China (316039).

Bass, Benjamin W.: 2 minerals, Georgia (309790, 310473, exchanges).

Bass, Mr. and Mrs. Benjamin W.: 7 minerals (310442).

Bates, Robert: 4 minerals (311039).
 Batham, Dr. E. J.: 27 echinoderms, New Zealand (303618).
 Baum, John L.: 1 bustamite, New Jersey (311351).
 Baumann, Dr. Richard W.: 167 stoneflies (312680); 12,659 insects and arthropods (311356, 315102); 30 crustaceans (315954).
 Beatty, Harry A.: 2 crustaceans, Martinique (312220).
 Beck, Dr. William M., Jr.: 5 stoneflies (313330).
 Bedette, Barbara A. and Blow, Warren C.: 1 lignitized cone, Virginia (315728).
 Behre, Dr. Eleanor H.: 3 crustaceans, North Carolina (315759).
 Belitsky, Dr. I. A.: 13 minerals, USSR (310989, exchange).
 Benitt, Ted: 1 tennantite, Africa (315520).
 Benson, Dr. Richard H.: 27 fossil ostracod slides (315516, 315950).
 Berndt, Douglas J.: 2 minerals, North Carolina (311385).
 Bernhardt, John: 1 beetle, North America (312707).
 Beshear, Ramona J.: 3 lace bugs (311977, 313338).
 Beston, George L.: 1 goethite nodule, Washington, D. C. (312897).
 Betram, Dr. J. G.: 9 wasps, Orient (311926).
 Biggart, Norman: 16 minerals, Massachusetts (311415).
 Bischoff, Dr. James L.: 200 vials Red Sea sediments (308865, exchange).
 Blake, Mrs. Doris H.: 34 mammal skins, 216 bird skins, 354 egg clutches (311207).
 Blanchard, Andre: 1,241 moths, Texas (311999, 313685, 315236).
 Blass, Herrn Alfred: 44 plants, South America (314946).
 Blow, Warren C. (*see* Bedette, Barbara A.).
 Bohart, Dr. R. M.: 9 wasps, U.S.A. (312024).
 Boucot, Dr. Arthur J.: 26, 068 brachiopods, Nova Scotia (313880).
 Bowers, Dr. C. D.: 72 cicadas, North America (312027).
 Bowman, Dr. T. E.: 130+ crustaceans, Maine (312592).
 Bradley, Mrs. Louise A.: 6 schorl crystals, Virginia (315668).
 Brewer, George: 56 minerals (310987, 311935, 312759, 314044).
 Bridge, David: 27 bird skins, 40 bird skeletons, North America (313699).
 Brinck, Dr. Per: 3 scoliidae, Sri Lanka (311216).
 Brindle, Dr. A.: 2 earwigs (316284).
 Britton, Dr. Joseph C.: 8 freshwater mollusks, Texas (310859).
 Brivio, Dr. Carlo: 2 scarab beetles, Michigan (316309).
 Brooks, Dr. Harold K. (*see* Collins, R. Lee).
 Brown, Clair A.: 15 plants, Louisiana (312836).
 Brown, Gregory: 2 painted barkcloths, Brazil (316303).
 Brown, Dr. W. L., Jr.: 59 insects (316318).
 Brown, Walter C.: 3 geckos (315708).
 Brownell, Dr. Robert, Jr.: 8 marine mammals (316564).
 Brumbach, William C.: 277 plants, Florida (305525, 308663, 309237).
 Bugbee, Dr. R. E.: 66 chalcid flies, North America (312007).
 Buell, William C., IV: 1 obsidian, Italy (311780).
 Bulmer, Dr. Walter: 33 frogs, lizards, and snakes (303425).
 Burggraf, Ingeborg: 47 minerals, New England (311417).
 Burke, Dr. Horace: 1 weevil (315225).
 Butler, Tomiko: 1 diopside, 2 epidote (314337).
 Butterworth, Mrs. Jean: 85 minerals, New England (311432).
 Cabri, Dr. Louis J.: 1 tulameenite (311041); 1 stillwaterite (313975).
 Caldwell, Dr. R. F.: 1 moth, New York (316548).
 Caldwell, Dr. Roy L. and Dingle, Dr. Hugh: 9 marine mollusks, Thailand (314784).
 Campbell, Dr. Howard W.: 4 lizards, West Indies (311043).
 Capriles, Dr. J. Maldonado: 8 true bugs (315093).
 Cares, Steven: 1 nepheline, Canada (315021).

Carlson, Paul H.: 537 stoneflies (312015, 313329, 314053).
 Carpenter, Michael: 2 crayfish, West Virginia (313247).
 Causey, Dr. Nell B.: 3 millipedes, North America (311994).
 Cebula, Albert: 12 magnetite crystals, New Hampshire (313745).
 Cerny, Dr. Peter: 9 amblygonite-montebrazite, Canada (313782).
 Chalumeau, Dr. F.: 26 scarab beetles (312704).
 Chandler, Donald S.: 5 beetles, North America (316286).
 Chandler, Jack H., Jr.: 18 freshwater mollusks, Georgia (313931).
 Chapin, Mrs. Joan B.: 2 beetles (312706).
 Charlton, Gilbert N., Jr.: partial vertebrate fossil skull (314335).
 Chick, Mrs. Walter G.: 68 minerals, New England (311448).
 Clamp, Dr. John: 3 protozoan slides, North Carolina (314320).
 Clark, Dr. William D.: 205 crustaceans (295300).
 Clarke, Dr. Arthur H.: 7 freshwater mollusks, Michigan (315743).
 Clayberg, Eric L.: 3 fossil whale vertebrae (314450).
 Close, Mrs. Emmett: 85 minerals, Connecticut (313442).
 Codoceo, Maria: 32 mollusks, Chile (313970).
 Cody, Dr. Robert D.: 1 mineral, Iowa (311416).
 Cohen, Anne: 400+ worms, 25 marine mollusks, 104+ crustaceans, Hawaii (315012).
 Colgate, William: 8 worms, Long Island Sound (304622).
 Collins, Mrs. R. Lee (through Dr. Harold K. Brooks): 6 leaf mines and insect galls on leaves (314847).
 Condie, Susan: 3 plants, Costa Rica (313535).
 Cook, Carl: 23 dragonflies, Worldwide (315750, exchange).
 Cook, Dr. Margaret L.: 12 midges, Australia (315235).
 Cooper, Dr. Kenneth: 257 beetles (312010).
 Cooper, Dr. Robert W.: 2 monkeys (313839).
 Corbett, H. V.: 1 calciostromantite, Maryland (311312).
 Corbett, J. A.: 1 hammock, Auca Indians, Ecuador (313311).
 Cortes, Dr. Raul: 10 small moths, Chile (315090).
 Coucaud, Mrs. Jean: 7 mollusks (310566).
 Covell, Dr. Charles V., Jr.: 4 butterflies, North America (315233).
 Craig, Mrs. Louis A.: 1 pottery water bottle, Mexico (316037).
 Craig, Dr. Wilfred S.: 1 caddisfly, Missouri (314063).
 Cressey, Dr. Roger F.: 2 lots washings, 500 marine mollusks (310512); 9 leeches (311884).
 Cronin, Dr. J. Eric: 37 beetles, North America (316050).
 Cross, Ellis R.: 1 mollusk (309928).
 Cross, Jarrett L.: 1,707 insects, North America (315227).
 Crow, Mr. and Mrs. Charles: 4 pyrite, Ohio (311038).
 Currier, Rock H.: 17 minerals (311354, 313072).
 Daugherty, A. L.: 1 agate egg, Oregon (308376).
 Davies, Robert: 42 crustaceans, Maryland (314045).
 Davis, Lloyd R., Jr.: 143 moths, North America (312694).
 Dawson, Dr. C. E.: 92 marine mollusks, Indonesia (313114).
 Dawson, Y. E. (*see* Barnard, Dr. J. L.).
 DeBarros, Neylson: 4 stokesite, Brazil (311951).
 Decker, Bryce G.: 40 mollusks, Marquesas Islands (314013).
 Degener, Drs. Otto and Isa: 20 crustaceans, Hawaii (315152).
 Del Solar, Dr. Enrique M.: 772 crustaceans, 1 brachiopod (298992).
 Demaree, Delzie: 49 plants, U.S.A. (314186).
 De Meillon, Dr. Botha: 126 insects, Africa (315223).
 Denning, Dr. Donald G.: 204 stoneflies (312017, 316271).
 Dennis, Steve: 30 moths, Colorado (315220).
 Dingle, Dr. Hugh (*see* Caldwell, Dr. Roy L.).

Dingman, Johnson (through Mrs. Eva D. Bacon): 1 beaded horn club, Michigan (316267).

Dobbins, Mr. and Mrs. Alex: 2 sea urchins, New Zealand (254774).

Dodgson, James C.: 9 arrows, 1 bow and arrows, New Mexico (313313).

Donnelly, Dr. T. W.: 2 damselflies, Puerto Rico (312002).

Dornfeld, Dr. E. J.: 154 butterflies, Oregon (310438).

Dow, Dr. Richard P.: 20 wasps, North America (314048).

Downs, Mrs. Frederick R., Jr. (*see* Abbott, Mrs. Robert O., Jr.).

Drummond, Mrs. F. O.: 25 minerals, North Carolina (314706).

Drummond, Billy: 7 crustaceans, Costa Rica (312432, exchange).

Dulin, Paul: 1 fossil seal jaw, North Carolina (313618).

DuMond, Dr. David M.: 250+ copepods, North Carolina (316020).

Dunn, Mrs. Ethel: 79 wolfeite (312902); 1 synthetic quartz crystal (313750); 102 minerals (313752).

Dunn, Pete J.: 14 minerals (311931).

Dunning, Gail: 10 knipovichite, California (310515).

Durrett, Charles W.: 7 worms, New York (307485).

Dybas, Henry: 34 beetles, North America (311981).

Eaker, Jack W.: 6 minerals, North Carolina (315669).

Easton, John W.: 1 pair of moccasins, U.S.A. (316302).

Eda, Shigeru: 2,465 beetles, Japan & Taiwan, 1 book (314387, exchange).

Edgar, Dr. Alan D.: 1 eudialyte, Canada (312480).

Edgar, Dr. Arlan L.: 11 caddisflies, Venezuela (315094).

Eker, Helene (*see* Wright, Eugenia I.).

Eldridge, Robert: 3 minerals, New Hampshire (315017).

Elliot, William R.: 4 beetles, U. S. A. (316042).

Emerson, Dr. K. C.: 6 red foxes (315762); 3,838 lice (316305).

Emery, Dr. Howard: 70 bamboos, Nepal (314971).

Enders, Dr. Robert K.: 80 small mammals, Panama (316644).

Engels, Vincent: 12 mayflies, Vermont (315224).

Engleman, Dr. R. Dodge: 1 stink bug, Central America (312695).

Ericksen, Merrill E.: 192+ crustaceans, Lebanon (268337).

Ernst, Dr. Carl H.: 29 turtles (308983); 1 softshelled turtle (315147).

Erwin, Dr. Terry L.: 6,055 coleoptera (312681, 313684).

Evans, Dr. and Mrs. Clifford: 1 headrest, Kenya; 1 armllet, Senegal (313310).

Evans, Howard: 4 newts, New York (315146).

Eyde, Dr. Richard (*see* Notzold, Dr. T.).

Eyles, Dr. A. C.: 2 lace bugs, New Zealand (310455).

Fairchild, Dr. G. B.: 8 horseflies (316323).

Fashing, Dr. Norman J.: 10 mite slides, North America (312692).

Faul, Dr. Henry: 5 minerals (311020, 315180).

Felix, Dr. Charles J.: 60 slides on 99 palynological types (315615).

Ferreira, Dr. Antonio J.: 1 marine mollusk (311428).

Ferris, Dr. O. D.: 302 butterflies, U.S.A. (315096).

Figiel, Dr. and Mrs. Leo S. and Figiel, Dr. and Mrs. Steven J.: 2 paintings, India (316036).

Finamore, Mrs. Ardis: 1 drum with sticks, American Indian (316263).

Fix, Dr. Michael: 6 brachiopods, Missouri (312939).

Fleisher, Dr. Robert L.: 186 foraminifera slides (311457).

Fleming, Dr. Laurence E. (*see* Henry, Dr. Jean-Paul; Reddell, James R.; and Wolff, Dr. Torben).

Flint, Dr. Oliver S., Jr.: 778 insects (313340, 316550).

Flynn, Shields: 6 genthelvite, Rhode Island (311387).

Foord, Dr. Eugene: 22 corderoite, 1 vial (313007).

Ford, Dr. James A.: 1 human skeleton missing right femur, Mississippi (316258).

Foster, Dr. David E.: 4 insects, Texas (316053).
 Franclemont, Dr. John G.: 20 small moths, North America (316272).
 Fransolet, Dr. Andre-Mathieu: 1 melonjosephite, Morocco (310173).
 Frommer, Saul: 15 caddisflies, South America (313874).
 Furnish, Dr. W. M.: 400 brachiopods, New Mexico (314451).
 Gagne, Dr. Raymond J.: 213 gall midges, North America (314057).
 Gaines, Dr. Richard V.: 12 minerals (310439, 311934, 313980).
 Gambino, Dr. Joseph F., III (*see* Gambino, Mrs. Ruth B.).
 Gambino, Mrs. Ruth B. (through Dr. Joseph F. Gambino, III): wedding kimono and shoes, Japan (316265).
 Garmo, Dr. Torgeir: 57 minerals, Norway (313746, exchange).
 Garrou, William E., Jr.: 1 bone comb, 1 fossil ivory, Alaska (303862).
 Geijskes, Dr. D. C.: 359 caddisflies, Surinam (314427).
 Gensel, Dr. Patricia G.: 18 paleobotanical specimens, Virginia (313740).
 George, Gilbert: 34 minerals, 1 lot fragments (314037).
 Gerberg, Dr. Eugene J.: 150 moths, Seychelles Islands (315226).
 Gess, Dr. F. W.: 1 wasp, Africa (311998).
 Gharui, Dr. M. S. K.: 1 lace bug, South America (312705).
 Ghiselin, Dr. Jon: 10 bird skins, Tunisia (316327).
 Ghose, Mrs. Krishnarati: 1 textile, India (313674).
 Gibbs, Dr. K. Elizabeth: 4 stoneflies (311988).
 Gibbs, Norman R.: 1 margarite, New Zealand (313441).
 Gibson, Dr. Gordon D.: 2 cloth caps, Maderia Islands (313672).
 Gibson-Smith, Dr. J.: 45 fossil mollusks, Venezuela (311014).
 Gillaspy, Dr. James E.: 7 lacewings, North America (316552).
 Gillogly, Allen: 115 beetles, Alaska (312025).
 Gilmore, Dr. Raymond: 11 worms (305420).
 Gittinger, Mr. and Mrs. J. Price: 15 native craft materials, Australia (313315).
 Gittins, Dr. John: 1 agrellite, Canada (315526).
 Godfriaux, Dr. Bruce L.: 9+ echinoderms, New Zealand (298189).
 Gold, Dr. D. P.: 1 wollastonite, Canada (311310).
 Gooding, Dr. R. U.: 58 crustaceans, West Indies (297650).
 Gordon, Dr. C. D.: 3 cicadas, North America (312019).
 Gordon, Gloria: 1 beetle and 1 caterpillar, Venezuela (313336).
 Goudey, Hatfield: 2 mineral lots (313743).
 Goulet, Henri: 29 ground beetles, North America (313691).
 Graham, Josephine L.: 4 embroidered clothing items, China (313673).
 Graves, Mr. and Mrs. Cecil: 8,500 mineral micromounts with catalog and microscope (315618).
 Green, Arthur A., Jr.: 35 rodents, Africa (315159).
 Greenhall, Arthur M.: 1 tortoise, Mexico (313510).
 Greenhall, Paul R.: 4 rodents, Trinidad (316636).
 Greenbaum, Harold: 2 sawflies (310971).
 Greenberg, Raymond: 1 human skeleton, Maryland (316693).
 Greenwell, Francis M.: 3 crustaceans, Virginia (313840) (*see also* Hasinger, David).
 Gressitt, Dr. J. L.: 43 wasps (313955).
 Grey, L. Paul: 506 butterflies and moths, North America (313319).
 Griesemer, Dr. Allan D.: 5 brachiopods, Wisconsin (311789).
 Griffin, Dr. W. L.: 19 minerals, Norway (309445, exchange); 1 wollastonite, Norway (311353).
 Grosch, Kurt J.: 24 marine mollusks, Mozambique (312136).
 Guggenheimer, Mrs. Max: cricket basket, China (316264).
 Gunther, Lloyd: 4 slabs and 10+ specimens of fossils (313780, exchange); 4 slabs and 10+ specimens of fossils (313836); 16 slabs of fossils (315296).
 Gurney, Dr. A. B.: 207 insects, Brazil (313326).

Hacker, Dr. J. Douglas: 56 cicadas, North America (312023).
 Haettenschwiller, Peter: 47 bagworm moths, Switzerland (313322).
 Hagen, Dr. K. S.: 4 beetles, North America (311978).
 Hall, David G.: 1,400 flies, Pacific Islands (316311).
 Hambleton, Dr. Edson J.: 100 plants, Virginia (310400).
 Hamilton, Dr. Robert W.: 4 weevils, North America (314061).
 Hammond, Billy A. F.: 12 crustaceans, Ecuador (314826).
 Hanahan, John, Jr.: 74 minerals, North Carolina (312763, 312899, exchanges).
 Handley, Dr. Charles O., Jr.: 825 mammals, Virginia (313964, 313965, 313966, 313967).
 Hangsterfer, Mrs. Geneva: 2 cloths, New Guinea (316257).
 Hansel, Cary J.: 300 wasps, North America (316057).
 Hansen, Gary: 1 pyrite, Missouri (313978).
 Hanson, Dr. Wilford J.: 90 beetles (312703).
 Hardy, Dr. Alan: 7 beetles, North America (311985).
 Haren, John L.: 1 apatite nodule, West Virginia (311973).
 Haring, Mrs. Douglas G.: 7 anthropological items, Japan (310854).
 Harmatuk, Peter J.: 1 vivianite, (315616); 2 nautiloids (315757).
 Harris, Dr. D. C.: 3 minerals, Newfoundland (311429).
 Harris, Dr. Halbert M.: 1,117 damsel bugs, worldwide (312005).
 Harrison, Dr. A. D.: 18 caddisflies, West Indies (314062).
 Harrison, Richard V.: 28 crustaceans (310916, 315581).
 Hasinger, David (through Francis M. Greenwell): 118 mammals (311907).
 Hatschbach, Dr. Gert: 139 plants (311124, 312818, 312826).
 Hatton, Lester E., Jr.: 2 mammals, Maryland (316635).
 Hayes, William A.: 4 crustaceans (312099, 313738).
 Heaslip, Dr. W. Graham: 400 marine mollusks, Vietnam (312137).
 Hecht, Mr. and Mrs. Arnold S.: 30 minerals, North Carolina (311933, 312381).
 Hedges, Frank R.: 9 insect larva, North America (316312).
 Heflin, Eugene: 2 human skulls, Oregon (316540).
 Heitzman, Dr. Roger L.: 6 moths, North America (316556).
 Hendry, Michael: 252 wasps, North America (313679).
 Henne, Christopher: 20 butterflies, North America (314390).
 Henry, Dr. Jean-Paul and Magniez, Dr. Guy (through Dr. Laurence E. Fleming): 34 crustaceans, 25 slides (295102, exchange).
 Hepner, Dr. L. W.: 261 leafhoppers (313688).
 Herman, Dr. Lee: 4 beetles (316546).
 Herman, Dr. Yvonne: 6 foraminifera slides, Arctic Ocean (312205).
 Herrmann, Dr. Scott J.: 67 flies, Colorado (311983, 316544, 316559).
 Hevel, Gary F.: 25,066 insects (312013).
 Hickman, Dr. Carole S.: 2 marine mollusks, 13 invertebrate fossils (312963).
 Hindman, James R.: 1 whelanite, Utah (314043).
 Hobson, Mrs. Kay: 3 worms, British Columbia (313784, exchange).
 Hodge, Robert P.: 5 frogs, Washington (313397).
 Hodges, Dr. Ronald W.: 17 butterflies, Michigan (312683); 389 caddisflies, Michigan (315241).
 Hodgkinson, Dr. Kenneth A.: 57 fossil scaphopods, Texas (312458).
 Hoffman, Dr. Richard: 19 stoneflies, Virginia (312020).
 Hopkins, Dr. Arthur H.: 5,000 invertebrate fossils, U.S.A. (310994).
 Houbrick, Dr. Richard S.: 150+ marine mollusks, British Honduras (311282).
 Houser, Mrs. Trudy: 1 aragonite, Arizona (310952).
 Hovore, Frank: 27 beetles, North America (316047).
 Howe, William H.: 134 butterflies, Kansas and 29 butterfly paintings (316551).
 Hubbs, Dr. Carl: 11 marine mammals (316637, 316648).
 Hudson, Maxwell John: 4 minerals, Australia (315664).
 Hueber, Dr. Francis: 18 augite, Fiji Islands (315665).

Huizing, Mr. and Mrs. Terry: 2 celestine, Ohio (313077).
 Hummon, Dr. William D.: 6 worm slides (311066).
 Hunt, Dr. John M.: 10 arrows, Venezuela (316034).
 Hutchinson, Helen J.: 1 mouse (316634).
 Hynd, W. R. B.: 13 lacewings, Worldwide (311995).
 Isena, Mr. and Mrs. H. A.: 6 calcite, Curacao (315662).
 Issiki, S.: 163 moths, Japan (316316).
 Jedlicka, John: 1 sulfur in dolomite, Maryland (310444).
 Johnson, Dr. Gerald H.: 1 fossil seal vertebra, Virginia (314152).
 Johnson, Dr. J. G.: 132 brachiopods, Nevada (314151, 314878).
 Johnson, Mrs. Kazue: 53 ethnological items, Japan (313671).
 Johnson, Roy, Jr.: 450 centipedes, California (316319).
 Jones, Kirkland L.: 3 frogs, Puerto Rico (315523).
 Jones, Richard: 2 twinned quartz, Arizona (310151).
 Journeay, John A.: 1 phlogopite, Canada (313136).
 Jurasz, Charles M.: 1 minke whale (316702).
 Kaicher, Mrs. Sally D.: 35 marine mollusks (313800).
 Kato, Dr. Akira: 3 minerals, Japan (315178).
 Kavanaugh, David H.: 1 beetle, North America (313001).
 Kawakatsu, Dr. Massharu: 6 flat worm slides (311424).
 Keller, Donald: 2 minerals (315955).
 Kennedy, Dr. Helen: 135 plants (313583).
 Kiel, Warren J.: 16 butterflies, North America (313335).
 Kimball, Charles P.: 40 moths, Florida (316141).
 Kimball, Kenneth W.: 329 caddisflies, Iran (315218).
 King, Dr. Robert Merrill: 2 land mollusks, Ecuador (314014).
 King, Vandall: 13 minerals, U.S.A. (310553).
 King, Warren B.: 2 bird eggs (316560).
 Kiracofe, Jack: mammal skeleton (316703).
 Knop, Dr. Osvald: 1 vial synthetic mineral crystals (284511).
 Knowlton, Dr. George F.: 7,506 insects (313327, 314065, 314066, 315097, 315221).
 Knutson, Dr. Lloyd: 75 freshwater snails, Colombia (313969).
 Kohn, Dr. Alan J.: 19 mollusks, North America (312411).
 Kono, Tokuwō: 30 thrips (313689, 315101, 316040, 316046, 316049).
 Kramer, H. H. (see Montgomery, Dr. B. E.)
 Krauss, Mrs. Roy: 6 marine mollusks, Florida (314720).
 Kristiansen, Roy: 81 minerals (310171, 315077, exchanges).
 Krombein, Dr. Karl V.: 1 mantispid (312699); 14 wasps (315244).
 Kuennemeier, Mr. and Mrs. Paul: 1 celestite, Ohio (310955).
 Kugler, Dr. Hans G.: 1 invertebrate fossil, Venezuela (315672).
 Kuhne, Dr. Helmut: 167+ crustaceans, Germany (301719).
 Kyle, Philip R.: 15 minerals, Antarctica (312188).
 Lager, Dr. George A.: 2 jagonerite, Yukon (310172).
 Lagier, Randy: 6 beetles, North America (312690).
 Lago, Paul K.: 10 scarab beetles (316060, 316547).
 Lambers, Dr. D. Hille Ris: 4 aphid slides (316292, exchange).
 Lamy, Dr. Jacques: 1 ground beetle, France (312682).
 Lane, Dr. Gary N.: 3 invertebrate fossils (312349).
 LaPointe, Walter G.: 1 ceremonial spearcase, Rwanda (313314).
 Lautenschlager, Dr. Lyle: 17,500 insects, South America (315222).
 Lavalley, Arthur: 31 flies, North America (316276).
 Lavigne, Dr. Robert: 17 dragonflies, Mexico (313325).
 Lawler, Dr. Adrian R.: 6 flesh flies, North America (316698).
 Leeuw, Irwin: 38 butterflies, North America (314052).
 Lenczy, Dr. Rudolph: 1 beetle, California (316306).

Leonard, Steven W.: 26 freshwater snails, North Carolina (315545).
 Leuschner, Ronald: 2 moths, California (312014).
 Levorson, Calvin O.: 22, 714 invertebrate fossils, Iowa (312367).
 Lewis, Cindy A.: 7 crustaceans, California (310877).
 Lewis, James, Jr.: 16 bird skins (316062).
 Lewis, Dr. John F.: 10 plutonic xenoliths, West Indies (311861).
 Lidstrom, Walt: 10 minerals, Worldwide (312447, exchange).
 Liefertinck, Dr. M. A.: 2 bees, Iran (316281).
 Lightner, E., Jr.: 16 handaxes, Libya (316299).
 Lindroth, Dr. Carl H.: 512 stoneflies (312689).
 Linsley, Dr. Robert M.: 60 fossil gastropods (313466).
 Lipps, Dr. J. H.: 37 foraminifera slides, Oregon (311199).
 Llewellyn, Mrs. Betty H.: 4 pyrite, Texas (313078).
 Loomis, H. F.: 1 centipede, Florida (312691).
 Lord, Dr. Arthur E., Jr.: 2 synthetic iron crystals (311414).
 Loveridge, Arthur: 1 crustacean, 60 land mollusks (310437).
 Lowry, Dr. W. D.: 19 brachiopods, Virginia (314321).
 Ludvigsen, Dr. Rolf: 37 brachiopods, Canada (313642, exchange).
 Luedtke, Robert J.: 4 beetles, Montana (316545).
 Lugton, Ralph: 137 minerals, North America (311386).
 MacMillan, Mrs. Mary: 1 lot pickeringite and gypsum, Colorado (314358).
 Macy, Clayton: 14 minerals, Arizona (315974).
 Magniez, Dr. Guy (*see* Henry, Dr. Jean-Paul).
 Malone, Mrs. Elsie: 7 marine mollusks (314399).
 Marcus, Philip: 2 fossil seal bones, Florida (312478, 313036).
 Marden, Luis: 1 mayfly, China (314060).
 Marrow, Maxwell P.: 15 marine mollusks (314691).
 Mason, Dr. Brian H.: 9 minerals (314040, 315519).
 Matheny, Mrs. Elizabeth A.: 115 freshwater mollusks, Nebraska (314012).
 Mather, Bryant: 35 caddisflies (314059, 316554).
 Mathis, Wayne: 5 flies, North America (315234).
 Matternes, Jay H.: 7 primates (316639).
 Martin, Dr. Peter B.: 31 dinosaur egg shell fragments (311541).
 Martorell, Dr. Luis F.: 4 treehoppers, West Indies (311984).
 May, Dr. Mallory S. III: 1 crustacean, North Carolina (312904).
 McAlpin, Bruce: 1 plant, Costa Rica (310384).
 McCabe, Tim L.: 30 butterflies, North America (316280).
 McFarlane, Mrs. Jesma: 3 mammals, Tobago (313938).
 McGuinness, Albert: 8 minerals, Oregon (312761, 313071).
 McLellan, Ian D.: 30 caddisflies, New Zealand (313692).
 McLellan, Jack H.: 4 synthetic minerals, North Carolina (315617).
 McLindon, William: 1 Paiute Indian basket (313241).
 Medler, Dr. J. T.: 328 true bugs, Africa (316313).
 Meggers, Dr. Betty J.: 12 household items, China and Japan (313677);
 1 wooden box, Samoa (316268).
 Melon, Dr. M. (through Dr. R. B. Neuman): 15 brachiopods (315980).
 Mendryk, Harold: 1 fossil ammonite (314153).
 Merritt, Mrs. Sammie J.: 5 bees, North America (314054).
 Meyer, Mrs. Kaniaulono: 15 mollusks, Panama (313930).
 Meyer, Dr. Marvin C.: 7 leeches, Missouri (311783).
 Micheli, Julio: 1 water beetle, Puerto Rico (313680).
 Miller, Mrs. Cynthia: 12 pyrite concretions, Illinois (315018).
 Miller, Dr. Walter B.: 2 land mollusks (315742).
 Milliron, Dr. H. E.: 101 bumblebees (312012).
 Milton, Dr. Charles: 2 minerals (311382, 314311).
 Minette, James: 11 minerals, California (310152, 315009, exchanges).

Moldenke, Dr. Harold N.: 1 plant, Ceylon (312288).
 Mongkhone, Vanida S.: 23 ethnological items, Laos (316261).
 Montgomery, Dr. B. E. and PURDUE UNIVERSITY (through H. H. Kramer):
 24,000 insects, Worldwide (316325).
 Moore, Dr. Ian: 20 beetles, Mexico (316322).
 Morris, Mrs. George Maurice: diamond and amethyst brooch (313916).
 Mrose, Mary: 1 mineral, Spain (313753).
 Muller, Joseph: 8 moths, New Jersey (316697).
 Murphy, Jack: 20 minerals, U.S.A. (315539).
 Nair, Dr. N. Balakrishnan: 29 marine mollusks, India (315744).
 Nawaz, Dr. R.: 1 killalaite, Ireland (311957).
 Neidhoefer, James R.: 1,303 butterflies, North America (313681).
 Neufeld, John: 5 fossil wood specimens, Wyoming (314068).
 Neuman, Dr. R. B. (*see* Melon, Dr. M.).
 Neves, Richard: 1 caddisfly, Massachusetts (315231).
 Newell, Dr. Norman D.: 4,000 marine invertebrates, Tunisia (315212).
 Newell, Robert L.: 7 stoneflies (312022).
 Nigrini, Dr. Catherine: 4 radiolarians, Arabian Sea (313963).
 Noffsinger, Dr. Estil J.: 3 cicadas, North America (311996).
 Norden, Arnold: 1 fossil turtle (310700); 19 crustaceans (311757, 313436).
 Norris, Dr. Kenneth S.: 5 marine mammals (316565).
 Norse, Elliott A. (through Dr. A. B. Williams): 2 crustaceans, Florida (312355).
 Notzold, Dr. T.: 21 vials coal fruits, Germany (311787).
 O'Brien, Dr. Lois B.: 2 bees, nest and associated immature stages, Central
 America (315276).
 Ofm, Dr. W. W. Kempf: 6 ants, South America (315238).
 Oliver, Dr. William: 1,120 invertebrate fossils, Europe (314722, 315671).
 Onyeagocha, Dr. Anthony C.: 52 dunite and chrome vein rocks, Washington
 (311862).
 Oswald, Delbert: 4 lumbaardite, Canada (314379, exchange).
 Palmer, Mrs. Velma: 2 basketry items, 1 pottery jar, U.S.A. (316296).
 Papesik, Dr. V. S.: 1 rutile, Canada (310190).
 Passaglia, Dr. E.: 3 minerals, Europe (311430).
 Patrick, M. Bordat: 123 beetles, North America (316227, exchange).
 Paul, Dr. Christopher R. C.: 6 invertebrate fossils, Indiana (313047).
 Peacor, Dr. Don: 1 cancrinite, Canada (311953).
 Pearson, Dr. M. J.: 1 siderite concretion, England (314313).
 Peck, Dr. Stewart B.: 3 beetles (311980); 11 lygaeid bugs (311987).
 Peel, Dr. John S.: 1 fossil gastropod, Scotland (311042).
 Perez-Farfante, Dr. Isabel (*see* Woodard, Bryan).
 Pescador, M. L.: 136 caddisflies, Chile (316052).
 Pessagno, Dr. Emile A., Jr.: 134 invertebrate fossil slides (313467).
 Peters, Daniel J.: 2 ostracod slides, Virginia (310864).
 Peters, Dr. William L.: 73 mayflies (313328).
 Petrey, Curtis: 8 calcite, California (313141).
 Pieters, S.: 4 minerals, Africa (311022, exchange); 10 minerals, Africa (315179).
 Pinch, William W.: 14 minerals (310530, exchange); 3 minerals (312898).
 Pine, Dr. Ronald H.: 1 bat, Maryland (316563).
 Plath, Walter: 566 insects, Puerto Rico (307560).
 Platt, Pamela: 1 fossil whale skull, Maryland (312672).
 Pletesch, Donald J.: 58 crustaceans, Mexico (310435).
 Poag, Dr. C. Wylie: 10 invertebrate fossils (313645).
 Poche, Richard M.: 34 rodents, Niger (316647).
 Pocheck, Stephen: 1 stilbite, New Jersey (313756, exchange).
 Poorman, Leroy: 45+ marine mollusks, Mexico (310118).
 Povarennykh, Dr. A. S.: 15 minerals, USSR (313137, exchange).

Powell, Dr. Jerry A.: 251 small moths, North America (316321).
 Pratt, Dr. Harry D.: 10 flies, North America (316002, exchange).
 Prew, Mrs. Laurie: 1 head ornament, 1 nose ring, India (313675).
 Proud, Mrs. Amanda: 24+ marine mollusks, Hong Kong (313917).
 Putnam, Doug: 47 echinoderms, Florida (306748).
 Pyburn, William F.: 2 frogs, Colombia (313468).
 Quick, Edward R.: 1 dolomite, Pennsylvania (311021).
 Quintero, Dr. Diomedes, Jr.: 6 plant bugs, Central America (315230).
 Rabinowitz, Deborah: 2 small moths, Panama (311979).
 Radford, Adm. and Mrs. Arthur W.: 1 landscape painting, China (313676).
 Rahn, Russell A.: 647 moths and butterflies (312029, 312684).
 Rahm, Dr. U.: 3 shrews, Congo (316704).
 Rainey, William E.: 1 sea turtle, West Indies (313133).
 Ranco, Frederick: 38 minerals, New England (311380).
 Rasnitsyn, Dr. A.: 1 wasp, USSR (312021).
 Ratliff, John: 2 crustaceans, Oregon (313985).
 Ream, Lanny R.: 6 calcite, Montana (310169).
 Reddell, James R. (through Dr. Laurence E. Fleming): 25 crustaceans,
 Mexico (304730).
 Reeves, Mr. and Mrs. M.: 1 garnet, Utah (313742, exchange).
 Reiger, George: 1 seal skull (316638).
 Reimann, Dr. Irving G.: 481 fossil blastoids (311233).
 Reinert, Dr. J. F.: 1,933 insects, North America (312754, 313697).
 Rentz, Dr. David C.: 1,994 insects (315228).
 Reynolds, John N.: 129 stoneflies, North America (312016, 313687).
 Ricker, Dr. William E.: 2 stoneflies, Japan (316243).
 Ridding, Michael: 2 serandite, Canada (310805, exchange).
 Riddle, William: 2 invertebrate fossils, Tennessee (313037).
 Rimoli, Renato O.: 48 shrimp, Dominican Republic (310090); 25 land mollusks,
 Dominican Republic (314846).
 Rios, Dr. Eliezer G.: 4 marine mollusks, Brazil (311540).
 Risebrough, Dr. Robert W.: 1 bird skin, Antarctic (316063).
 Roberds, Dr. Frances E.: 37 ethnological specimens, (316300).
 Robertson, Mrs. Anabel Graves and Wiggins, Mrs. Isabel Graves: 62
 ethnological specimens (310992).
 Robertson, Mrs. Kay: 1 cinnebar, California (315020).
 Robinson, Dr. G. G.: 4 aphid slides, North America (311993, exchange).
 Robison, Dr. R. A.: 4 invertebrate fossils (310939).
 Rockney, Vaughn: 23 ivory figures, Alaskan Eskimo (313669).
 Roe, Dr. Arthur: 18 minerals and 1 lot (310953, 312760, 312895).
 Rogers, Mr. and Mrs. Ernest H.: 262 minerals (311449).
 Romero S., Dr. Miguel: 4 wulfenite, Mexico (311912).
 Root, Dr. Richard B.: 8 milkweed bugs, South America (312001).
 Rossman, Dr. George R.: 1 alstonite, Illinois (310170).
 Rowe, Dr. Gilbert: 1 echinoderm, Massachusetts (304793).
 Rowley, Elmer B.: 1 celestite, New York (300382, exchange).
 Rucker, Dr. J. B.: 24 bryozoa, Florida (315952).
 Ruhoff, Mrs. Florence: 5 minerals, 1 lot, North Carolina (311311).
 Russi, Dr. Simon: woman's cap and boots, Tibet (313668).
 Saas, Dr. Dan: 2 invertebrate fossils, New York (310922).
 Sabrosky, Dr. Curtis W.: 192 insects (312685, 313334, 316293).
 St. Hoyme, Dr. Lucille E.: 1 domestic cat (316561).
 Sakimura, K.: 19 thrips, Hawaii (316269).
 Sakurai, Dr. Kin-ichi: 1 bustamite, Australia (313019).
 Salnier, James: 20 beetles, North America (311410, exchange).
 Sanchez, Dr. Patricio: 15+ echinoderms, Chile (264900).

Sanders, Mrs. Arzada Brown: 4 pottery items (316266).
 Sanderson, Dr. Milton: 2 beetles, North America (315900).
 Sartenaer, Dr. Paul: 13 invertebrate fossils (313295, 315880).
 Sawyer, Dr. Roy T.: 1,000+ freshwater mollusks, 18 crustaceans, 2,091 leeches (310857).
 Schade, Francisco H.: 13 bats, Paraguay (313937).
 Schaffner, Dr. Joseph C.: 39 plant bugs (316044, 316055).
 Scheibner, Dr. Rudy: 3 cicadas, North America (312003).
 Schlauch, Frederick C.: 4 watersnakes, New York (314740).
 Schlicker, Ernie: 1 danalite, New Hampshire (310951).
 Schneck, Dr. Juan A.: 15 caddisflies, Argentina (316553).
 Schroeder, Dr. Robert E.: 20 sponges, Cayman Islands (313806).
 Schuh, Joe: 61 insects (314047, 316557).
 Schullen, Dr. Herman A.: 11 wasps (311991, 316294).
 Seel, Paul: 1 xenolith, South Africa (311782).
 Seeling, R. A.: botanical library and photographs (311602).
 Sering, Harry: 3 calcite, Illinois (313008).
 Serna, Marco A.: 15 bird skins, Colombia (308535, exchange).
 Shea, Dennis: 24 minerals (312762).
 Sihvonen, John: 72 plants, Africa (311174).
 Simpson, Ronald D.: 43 brachiopods, New Mexico (311013).
 Sinkankas, John: 1 cut opal (315008, exchange); 21 minerals (315968).
 Sisco, Stephen G.: 1 plant, Oklahoma (312780).
 Slagle, Edward S.: 2 fossil mammal bones (315619).
 Smith, Dr. C. F.: 80 aphid slides, North America (316290, exchange).
 Smith, Dr. David R.: 311 sawflies, Brazil (312008).
 Smith, Frederick L.: 5 minerals, Africa (312896).
 Smith, F. L.: 1 serandite, Canada (315517).
 Smith, Joe B.: 1 chrysocolla, Utah (311381).
 Snyder, Dr. Scott W.: 5 foraminifera, Gulf of Mexico (313864).
 Sohn, Dr. I. Gregory: 1 freshwater mollusk, Sweden (313649).
 Soini, Pekka: 50 snakes, Peru (311044).
 Spangler, Dr. Paul J.: 558 insects, North America (312698, 313698).
 Spencer, Douglas R.: 10 polychaetes, New York (311447).
 Spilman, Theodore J.: 345 insects, North America (316307).
 Squires, Dr. H. J.: 25 crustaceans, Colombia (311375).
 Stanford, Jack: 25 stoneflies, Montana (312687).
 Stansbery, Dr. David H.: 8 freshwater mollusks, Pennsylvania (311281).
 Stark, William P.: 1,773 insects, North America (311705, 312697, 315243).
 Steinberg, Stuart L.: 1 ceremonial human skull, New Guinea (309797).
 Steiner, Warren E.: 14 biting midges, Guatemala (314051).
 Steinmann, Dr. H.: 15 caddisflies, Argentina (316043).
 Stemler, Kathy: 6 insects, Puerto Rico (312011).
 Stewart, John: 1 genthelvite, Canada (310441).
 Stockton, Dr. William, Jr.: 1 dance mask, Bali (313667).
 Stockwell, Dr. Henry: 27 beetles (316865).
 Stone, Leonard Riley (through Baltimore County Police Bureau): 1 human skull, Maryland (316543).
 Stonehouse, Tom: 22 fossil mammals and turtles, New Jersey (315739).
 Strimple, Dr. Harrell L.: 136 fossil crinoids (310918, 312221).
 Stuart, Mrs. Hadley: 16 minerals, Idaho (314042).
 Suharto, Mrs. J. N. J.: 3 dancing doll figures, Java (313666).
 Sullivan, Barbara: 7 crustaceans, Delaware (293694).
 Sullivan, Dr. J. Bolling: 444 moths, North Carolina (312026, 313682).
 Surdick, Rebecca Faith: 133 aquatic insects, North America (316549).
 Swanson, George: 3 minerals, Africa (313744).

Taggart, David M.: 8 gypsum, Mauritania (314781).
 Tarshis, Dr. I. Barry: 10,977 insects and arthropods (316631).
 Tarter, Dr. Donald C.: 108 stoneflies, West Virginia (311982).
 Tawney, Jeri: 1 petrified wood slice, Oregon (314400).
 Taylor, Dr. John: 300 plants, Costa Rica (311629, exchange).
 Taylor, S.: 1 beaded leather pouch, U.S.A. (316035).
 Tennant, Mr. and Mrs. George: 3 minerals, New Mexico (312758).
 Tenorio, Dr. J. A.: 6 mosquitoes, New Guinea (316289).
 Teskey, Mrs. Margaret: 45+ marine mollusks, Florida (311019).
 Tetrick, John: 2 minerals, U.S.A. (310514).
 Thompson, Dr. F. Christian: 6,685 flies, Worldwide (315229).
 Thompson, Dr. Geoffrey: 2 vials olivine (315518).
 Thomssen, Richard W.: 16 minerals, U.S.A. (311352, 312481, 313747).
 Thorington, Dr. Richard W., Jr.: 454 mammals (315605, 316632, 316633).
 Thornton, Gerald A.: 18 flies, New Hampshire (312004, 312686).
 Tilden, James W.: 221 butterflies, North America (312000).
 Tkac, Martin A., Jr.: 2 caddisflies, Ohio (314049).
 Togashi, Dr. Ichiji: 33 sawflies, Japan (310084, 313286, exchanges); 1 sawfly, Asia (316277).
 Tonander, J. F.: 3 cabochons (304858).
 Traub, Dr. Robert: 2,668 fleas, Worldwide (315100).
 Trinast, Beth Michele: 180+ crustaceans, 1 slide, California (308901).
 Triplehorn, Dr. C. A.: 6 beetles, North America (310300).
 Troup, Randy: 3 plants, Alabama (311632).
 Truedsson, Ake: 10 minerals, Sweden (311911, 313741, exchanges).
 Tschernich, Rudy: 9 minerals and 2 vials, Oregon (313977).
 Tunnell, Dr. Wes: 200+ marine mollusks, Gulf of Mexico (312409).
 Turnbow, Robert H., Jr.: 148 beetles, North America (316048).
 Turner, Mr. and Mrs. Milton: 2 ivory carvings (313079); 1 watch, 1 pendant, 2 snuff bottles (314039).
 Vagvolgyi, Dr. Joseph: 13 land mollusks, U.S.A. (293413).
 Vail, Virginia A.: 50 freshwater mollusks, Florida (312138).
 Van der Vecht, Dr. J.: 9 wasps (316315).
 Vickers, Mrs. Frances L.: 4 gypsum, Oklahoma (310440).
 Vickery, Cliff: 1 cryolite, Canada (310950).
 Villemarette, Mrs. Betty C.: 99 ethnological items, Africa (313272).
 Vitt, Laurie J.: 6 lizards, U.S.A. (312747).
 Vogel, John W.: 1,616+ crustaceans (271542, 294121).
 Vokes, Dr. Emily H.: 17 marine mollusks (312410, 315043); 21 fossil invertebrates (312348, 312395).
 Walker, Michael F.: 20 crustaceans, India (311858).
 Walker, William A.: 1 dolphin skull (316643).
 Wallen, Dr. Eugene: 180 mollusks, Pakistan (233336).
 Waller, Mrs. R. R.: 1 Indian pottery bowl and 1 blanket, U.S.A. (316038).
 Waller, Dr. Thomas R. (*see* White, James Seeley).
 Wangchuk, His Majesty Jigme Singye: 2 costumes, Bhutan (316297).
 Ward, Dr. Ronald: 3 land mollusks, Ethiopia (314015).
 Wasshausen, H. P.: 6 synthetic quartz (314038).
 Watkins, Dr. Julian F., II: 3 ants, Mexico (313320).
 Watson, Allan: 5 moths (314692).
 Watters, George T.: 1 marine mollusk, Virgin Islands (313919).
 Watts, J. G.: 3 thrips (312700).
 Weber, Wilhelm: 2 plants, South America (312315).
 Weibezahn, Franz H.: 191 caddisflies, Venezuela (311989).
 Weidner, Dr. H.: 28 caddisflies, Peru (316041).
 Weinberg, James R.: 8 crustaceans, California (315525).

- Wentworth, Mr. and Mrs. John: 1 lot idocrase, in memory of Edwin E. Kinsey (312382).
- Weske, John S.: 1 red squirrel (316646).
- Wetmore, Dr. Alexander: 8 fish skeletal elements, 20 mammal skulls and/or skeletons (311206); 4 mammal skins and skulls (315603).
- Wheeler, Dr. Marshall R.: 18 flies (313324, 316314).
- White, Dr. Harold B.: 2 dragonflies, Maine (313333).
- White, James Seeley: 3 marine mollusks (310876); (through Dr. Thomas R. Waller): 1 marine mollusk (312880).
- Whitehead, Dr. D. R.: 252 ground beetles, North America (312028).
- Wielgus, Ronald S.: 1,109 insects (311986, 313339, 313690, 314064, 316324).
- Wiggins, Mrs. Isabel Graves (*see* Robertson, Mrs. Anabel Graves).
- Wilber, David P.: 2 minerals (313075, 315019).
- Williams, Dr. A. B. (*see* Norse, Elliott A.).
- Williams, Holly and Wright, Marian: 20 insects, Virginia (315095).
- Winters, Mary: 1 hydroxylapatite, Maryland (314312).
- Wolff, Dr. Torben (through Dr. Laurence E. Fleming): 182+ crustaceans, Denmark (295101, exchange).
- Womble, Edgar A., Jr.: 1 nautiloid, North Carolina (315756).
- Womble, Edward: 22 echinoids (311947).
- Wood, Dr. Stephen L.: 4 stoneflies, Utah (316696).
- Woodard, Bryan (through Dr. Isabel Perez-Farfante): 3 crustaceans, New York (307640).
- Woodring, Dr. Wendell P.: 16 marine mollusks, Venezuela (310991).
- Worthley, Dr. Elmer G.: 2 arrows, Congo (315089).
- Wright, Eugenia I. and Eker, Helene: 270 mollusks (310860).
- Wright, Marian (*see* Williams, Holly).
- Wyman, Donald G.: 155 minerals, North America (311379, 311388, 312757).
- Yancey, Dr. T.: 18 invertebrate fossils, Malaya (311716).
- Yenowine, Mr. and Mrs. Tom: 1 calcite, Kentucky (315667).
- Yepez, Dr. F. Fernandez: 18 insects, Venezuela (313625).
- Yerger, Dr. Ralph W.: 1 mammal skull and skeleton (316701).
- Yoder, Dr. Robert Lee: 55 invertebrate fossil slides, 19 slabs containing fossils (313111).
- Young, David G.: 4 moth flies, North America (316059).
- Yount, Victor: 1 vanadinite, Morocco (311972).
- Zibrowius, Dr. Helmut: 200+ echinoderms, Azores (307807); 5+ echinoderms, 3 crustaceans (312346).

Donors to the National Collections

INSTITUTIONAL

- Academia Brasileira de Ciencias, Brazil (through Dr. Hugo de Souza Lopes): 1 fly, South America (313363, exchange).
- Academy of Sciences of the USSR: *Paleontological Institute* (through Dr. A. Rasnitsyn): 27 wasps (313332, exchange); 7 chrysididae (316279, exchange). *P. P. Shirshov Institute of Oceanology* (through Dr. R. Ya. Levenstein): 5 polynoids (308816, exchange). *Zoological Institute* (through Dr. V. Marshakov): 75 wasps (315099, 316273, exchanges); (through Dr. Vera Richter): 3 tachinid flies (309994, exchange).
- Agricultural Research Institute, Australia (through D. E. Symon): 54 plants (311637).
- Agriculture, U. S. Department of: *Agricultural Research Service* (through Dr. Richard H. Foote): 100 mollusks (302491); 50,709 insects, worldwide (316140); (through Dr. A. S. Gurney): 1,879 insects, South Africa (312708); (through Dr. Lloyd V. Knutson): 283 mollusks (278478, 283854, 294430,

300266, 305847); (through Dr. F. D. Wilson): 4 Hibiscus, Australia (311582). *Forest Service* (through Elbert L. Little, Jr.): 1,321 plants, Alaska (305588, 311585).

Alabama, University of (through E. C. Beckham): 13 crustaceans, Alabama (310235); (through Thomas S. Jandebour): 796 crustaceans (310234, 311389, 315740); (through Dr. C. Earle Smith, Jr.): 8 plants (311114).

Albert Ludwigs Universität, Germany (through Dr. Otto V. Helversen): 1 plant and 5 photographs (312865).

Allyn Museum of Entomology (through Mrs. Jacqueline Y. Miller): butterfly, Central America (316054).

American Museum of Natural History (through Harold S. Feinberg): 5 worms (288912, exchange); (through Drs. Bruce B. Collette and Donn E. Rosen): 7 fish, Guatemala (314810, exchange).

American University (through Dr. Ellis McDowell): 9 human skeletal remains (316259).

Arizona, University of (through Dr. Richard C. Brusca): 5 basketstars (311751); (through Elaine Snyder): 13 crustaceans (314737); (through Dr. Floyd Werner): 2 flies (313323). *Arizona Cooperative Fishery Unit* (through Michael Saiki): 11 crustaceans (311273).

Arizona State University (through Dr. Denton Belk): 224+ crustaceans (310697, 313888, 315760); (through Dr. Gerald A. Cole): 2 crustaceans (315149); (through Elinor Lehto): 344 plants (314883, exchange); (through John N. Rinne): 22 crayfish (297830).

Arkansas State University (through Dr. George L. Harp): 13 crustaceans (312414, 313041).

Auburn University (through Tom French): 2 crayfish (315758).

Australia Department of Fisheries (through Dr. Michael King): 5 crustaceans (308882).

Australia Department of Mines: *Government Chemical Laboratories*: 1 lot holtite (311431); 1 russellite (312901).

Australian Museum (through Dr. D. J. G. Griffin): 2 isopods (311712, exchange).

Baltimore County Police Bureau (*see* Donors to the National Collection, Individual: Stone, Leonard Riley).

Bermuda Biological Station (through Dr. John C. Markham): 50 crustaceans, 1 slide (311208, 314018); (through Dr. W. Sterrer): 1 sea urchin (312881).

Bishop Museum, Bernice P.: 172 plants (311111, exchange); (through Dr. Dennis M. Devaney): 10 echinoderms (310114, exchange); (through Dr. J. L. Gressitt): 692 long-horned beetles (314067, exchange); (through Anita Manning): 38 plants (312238, exchange).

Bon Earth Sciences, Inc. (through Tsukasa Kikuchi): 5 mineral specimens (312479).

Boston University (through Dr. Kenneth R. H. Read): 3 crustaceans (310554). *Marine Program* (through Dr. Arthur G. Humes): 7,981 copepods (310301, 313465); 3 worms, 15 brittle stars (311315).

Botanical Survey of India: 58 plants (313517).

Bowling Green State University (through Patrick M. Muzzall): 27 isopods, Ohio (309788).

Brigham Young University (through Margaret Doherty): 263 plants (310373, exchange); (through Dr. Parley V. Winger): 8 crustaceans (307586).

British Columbia, University of, Canada (through Dr. Bruce MacBryde): 55 plants (310401, 314240).

British Museum (Natural History) (through Dr. Z. Boucek): 4 parasitic wasps (316310); (through Theya Molleson): 4 casts of early human skull and mandible fragments (316298, exchange); (through Dr. Ellis F. Owen): 10 fossil brachiopods (315951, exchange); (through R. Ross): 414 plants

- (314206, 314261, 314929, exchanges); (through C. Whiteford): 152 plants (314207).
- Brookhaven National Laboratory (through Dr. David Judkins): 71,250+ crustaceans (313811).
- California, University of: *Berkeley Campus*: 111 plants (312822, exchange); (through Dr. Roy L. Caldwell): 13 stomatopods, Thailand (307810); (through Dr. P. A. Opler): 20 botanical specimens, Costa Rica (311138); (through Dr. William E. Rainey): 23 crustaceans, 3 mollusks (312493). *Los Angeles Campus* (through Robert O. Schuster): 242 scale insects (312338). *Los Angeles Campus* (through Dr. Hal Arnell): 11 mosquitoes (312009); (through Dr. LouElla R. Saul): 17 Cretaceous cymbophora and 3 casts (314132). *Riverside Campus* (through Dr. P. H. Timberlake): 11 bees (311992); (through George W. Gillett): 21 plants (314880); (through Laurel L. Walters): 65 crustaceans (313402); (through Barbara Voorhies): 10 mollusks (311316). *Scripps Institution of Oceanography* (through Ray Bauer): 6 crustaceans, Mexico (314739); (through Dr. Richard H. Benson): 9 ostracodes (315063); (through Dr. P. K. Dayton): 2 asteroids, Chile (312418); (through Dr. Abraham Fleminger): 15 copepods (305039); (through Dr. Patty Pauluso): 50 macroinvertebrate taxa (314316); (through Dr. Larry Ritchie): 6 copepods and 9 slides (305915); (through David Thistle): 2 isopods (314765) (see also Donors to the National Collection, Individual: Barnard, Dr. J. L.).
- California Academy of Sciences (through Dr. Paul H. Arnaud, Jr.): 6 flies, Colombia (316288); (through John Chapman): 88 crustaceans, California (313035); (through Dr. Barry Roth): 1 pelecypod (313863).
- California Department of Fish and Game (through J. R. Raymond Ally): 4 squid (313053).
- California Department of Food and Agriculture (through Tokuwo Kono): 1 thrips (313678, exchange).
- California State College: *Los Angeles Campus* (through Dr. J. Henrickson): 72 botanical specimens, Mexico (310324, 310325). *Moss Landing Marine Laboratories* (through Dr. Jack T. Tomlinson): 1 crustacean, Honduras (294541).
- California State University (through Dr. Ju-Shey Ho): 14 copepods (310069); (through Doyle A. Hanan): 22 copepods (313134); (through Dr. Earl Segal): 3 crustaceans (314155).
- Cambridge University, England (through Dr. H. B. Whittington): 64 brachiopods (316096, exchange).
- Canada Department of Agriculture: *Central Experimental Farm*: 413 cannabis (315802); (through Dr. Edward C. Becker): 1 beetle (316282); (through Gary Gibson): 7 sawflies (314389); (through Dr. B. V. Petersen): 1 blackfly (313498).
- Canadian Fisheries Research Board (through Dr. Z. Kabata): 30 crustaceans, Mexico (292563).
- Canadian Wildlife Service (through Dr. R. Stewart Anderson): 50+ isopods (313516).
- Centre de Recherches Oceanographiques, France (through Dr. P. LeLoeuff): 21 crustaceans (289318).
- Centro de Investigaciones Marinas, Venezuela (through Dr. Aljadys Gonzalez): 1 marine mollusk (312455).
- Cerritos College (through Dr. Jules M. Crane, Jr.): 1 amphipod (268589).
- Chesapeake Biological Laboratory (through Dr. Don Heinle): 7 lots plankton samples (310949).
- Christopher Newport College (through Daniel L. Peters): 17 crayfish (294429).
- Clemson University (through Dr. Rudolph Prins): 126+ copepods (271042).
- Colegio La Salle, Bolivia (through Adolfo Jimenez): 8 ferns (311089).

- Colorado, University of: *Museum* (through Dr. William A. Weber): 75 bryophytes (313569, exchange).
- Combined Scientific Supplies (through Terry W. Taylor): 2 scarab beetles (314388, exchange).
- Commerce, U.S. Department of: *National Oceanic and Atmospheric Administration* (through James Bailey): 1 Minke whale (316649); (through Dr. C. Christopher Boucher): 3 crustaceans (312517); (through Dr. Isabel Canet): 91+ crustaceans (313796); (through Dr. J. Lockwood Chamberlin): 48+ worms, 1, 500 marine mollusks (310121); 15 mollusks (311491); (through Alexander Dragovich): 45 crustaceans (312224, 313049); (through H. Arnold Karo): 9 corals (256361); (through Dr. Richard B. Roe): 218 crustaceans (302545); (through Dr. Carl H. Saloman): 3 crustaceans (314433, 315676); (through Gerald A. Sanger): 12 amphipods (305513); 500+ amphipods, 1 isopod (309966); (through Dr. Paul J. Struhsaker): 1 stomatopod (311857); (through Dr. Joe Tashiro): 22 crustaceans (299261, 298298); (through Dr. Austin B. Williams): 3 crustaceans (312474).
- Commonwealth Scientific and Industrial Research Organization (CSIRO) (through Dr. E. B. Britton): 3 beetles (311727, exchange); (through Dr. I. F. B. Common): 3 butterflies (316045); (through Dr. J. C. Watt): 2 earwigs (312693).
- Connecticut, University of (through Dr. Gregory J. Anderson): 2 *Solanum* (314182).
- Conservatoire et Jardin Botaniques, Switzerland: 40 plants (314183, exchange).
- Copenhagen, University of, Denmark: 33 lichens, Greenland (314188, exchange).
- Cornell University (through Margaret H. Stone): 36 plants, West Indies (310375, exchange).
- Czechoslovakia Geological Survey (through Dr. V. Havlicek): 114 brachiopods (314452, exchange).
- Dalhousie University, Canada (through Brian M. Marcotte): 20 crustaceans, 4 slides (307781).
- Dallas Museum of Natural History (through Richard W. Fullington): 1 mollusk (308979).
- Decorative Consultants: 4 archeological fragments, Thailand (313312).
- Deeming, John C.: 73 flies, Africa (312688).
- Defense, U.S. Department of: *Department of the Air Force* (through Col. John Carson): 74 reptiles and amphibians, Vietnam (303759); (through Capt. R. W. Clegern): 21 lizards, Phoenix Islands (313140). *Department of the Army* (through Capt. J. Abercrombie, T. Gaffigan, E. L. Peyton, and Maj. J. F. Reinhart): 570 mosquitoes, Maryland (313695); (through Mrs. Hu-cha Cho): 83 midge slides, Korea (315091). *Department of the Navy* (through Tom J. Peeling): 5 crustaceans, California (315210); (through Capt. H. C. Sudduth): 18 bird skins, Vietnam (278107); (through Dr. Peter Vogt): 16 glassy basalt (311866).
- Del Mar College (through Dr. Robert D. Barnes): 1 echinoderm, Texas (298680).
- Discovery Bay Marine Laboratory, Jamaica (through Cathy Engel): 19 crustaceans (290029).
- Duke University (through Dr. C. G. Bookhout): 3 crustaceans (314403); (through Richard B. Searles): 42 algae (311572); (through Dr. Maximo Cerami-Vivas): 744 worms (255045); (through Dr. Kirby Smith): 3+ holothurians (302498).
- East African Marine Fisheries Research Organization (through Dr. A. J. Bruce): 1 crustacean, Kenya (311888).
- East Africa, University of, Kenya (through Mediterranean Marine Sorting Center): 71 crustaceans (294887).

- East Carolina University (through Dr. Scott W. Snyder): partial skull of a *Protocetus* (313862).
- Ege University, Turkey (through Dr. Ahmet Kocatas): 2 crustaceans (311807).
- Elmore County Sheriff's Office, Idaho (through Earl Winter): human skull (316539).
- Emilio Estrada Museum, Ecuador (through Drs. Clifford Evans and Betty J. Meggers): 2 lots human skeletal remains (316260).
- Environmental Protection Agency, U.S. (through Juan G. Gonzalez): 14 crustaceans, Massachusetts (292008).
- Escuela de Ciencias, Venezuela (through Luis Jose Cumana Campos): 29 plants (310390).
- Escuela Nacional de Agricultura, Mexico (through Dr. Stephen D. Koch): 223 plants (314888, exchange).
- Exxon Corporation: *Exxon Production Research Co.* (through Dr. James L. Lamb): 4 globorotalia (313048). *Eastern Marine Division* (through Duane O. LeRoy): 2 foraminifera slides (311070).
- Faculdade de Ciencias Medicas e Biologicas de Botucatu, Brazil (through Dr. Ilse S. Gottsberger): 19 plants (313533, 314185, 314916).
- Faculte des Sciences de Marseille, France (through Dr. Patrick M. Arnaud): 146+ crustaceans (296581).
- Fairchild Tropical Garden (through Donovan S. Carrell): 1 polypodium, West Indies (314247).
- Field Museum of Natural History: 380 plants (314264); (through Dr. Lorin I. Nevling): 1,589 plants (311579, 314234, 314889, exchanges); 61 plants (311592, 312308, 312777, 312796, 314215); 596 plants (312775 gift-exchange).
- Florida, University of: *Florida State Museum* (through Dr. Georgiana B. Deevey): 5 crustaceans, 5 slides (310511, 315933); (through Dr. Carter R. Gilbert): 546 crustaceans (289913, 311016); (through Dr. John F. Meeder): 5 fossil mollusks (312625).
- Florida Department of Agriculture and Consumer services (through H. A. Denmark): 1 thrips (316317, exchange).
- Florida Department of Natural Resources (through Dr. William Lyons): 1,000+ echinoids (286128).
- Florida Department of Pollution Control (through Forrest S. Fields, Jr.): 1 crustacean (310878).
- Florida Junior College at Jacksonville (through Roger M. Lloyd): 2 fish, Peru (305708).
- Florida State University (through Jim Bishop): 19+ seastars (290376); (through Dr. Robert W. Hastings): 541+ crustaceans (292582).
- Forschungsinstitut Senckenberg, Germany (through Dr. R. zur Strassen): 25 thrips (316061, exchange).
- General Services Administration (through Arthur F. Sampson): 2 human bones (316806).
- George Washington University: *Medical School* (through Dr. Charles Mayo Goss): 1 primate (314020).
- Georgia, University of (through Wilbur H. Duncan): 23 plants (312290); (through Richard Heard III): 35 crustaceans (289503); (through Drs. J. O. Howell and H. H. Tippins): 7 coccoidea (316555).
- Georgia Department of Natural Resources (through Edward T. Hall, Jr.): 43 crustaceans (310948).
- Goteborgs Universitet, Sweden: 232 plants (313554, 314944).
- Great Britain Ministry of Agriculture, Fisheries, and Food (through Dr. D. G. H. Halstead): 65 insects (316051, 316326).
- Great Lakes Biolimnology Laboratory, Canada (through Dr. David G. Cook): 2 worms (311277).
- Guam, University of (through Dr. Masashi Yamaguchi): 1 echinoderm (310113).

Guelph, University of, Canada (through Mary Beverley-Burton): 6+ echinoderms (291035).

Gulf Coast Research Laboratory (through Dr. Alfred P. Chestnut): 1 crustacean (311074); (through Dr. William D. Burke): 73 sea anemones (305669); (through Dr. C. E. Dawson): 57+ echinoderms (305237); 13 fishes (308522); 1,926+ crustaceans, 106 echinoderms, 50 marine mollusks (308881); 4 mollusks, 28 echinoderms, 2 worms, 216 crustaceans (313094); 253+ crustaceans, 1 worm, 3 mollusks (315292); 152 crustaceans, 19 worms (315724).

Gulf Research and Development Co. (through Dr. A. J. Perrotta): 1 vial zinc-phlogopite (315670).

Hansen Minerals, Inc. (through Gary Hansen): 13 minerals (310475); 7 minerals (310453, 310474, 312903, exchanges).

Harbor Branch Foundation (through Dr. David W. Kirtley): 36 marine mollusks, Florida (313069).

Harvard University: *Gray Herbarium*: 2, 724 plants (311164, exchange); (through Michael A. Canoso): 322 plants (311557, exchange). *Mineralogical Museum* (through Clifford Frondel): 7 minerals (312893, exchange). *Museum of Comparative Zoology* (through Dr. Kenneth J. Boss): 3 marine mollusks (316097).

Hawaii, University of (through Dr. John W. Beardsley): 7 mealybugs (316283); (through Dr. D. Elmo Hardy): 69 fruit flies (315242); (through Dr. John Maciolek): 20 fishes (314809); (through Dr. Richard Young): 3 crustaceans (315011). *Hawaii Institute of Marine Biology* (through Wayne J. Baldwin): 1 lot fishes (315530). *Medical School* (through A. C. Smith): 2 echinoids (306227).

Health, Education, and Welfare, U.S. Department of: *Arctic Health Research Center* (through Dr. Francis H. Fay): 1 fossil walrus skull (310701). *Center for Disease Control* (through Dr. Steve Bowen): 17 mammals (316562); (through Robert G. McLean): 75 bird skins, 44 bird skeletons (312621).

Hebrew University of Jerusalem, Israel (through Dr. F. D. Por): 151 cephalopods, Red Sea (297637).

Herbarium Bogoriense, Indonesia (through Dr. A. J. Kostermans): 1,064 plants (310368, exchange).

Herbario Barbosa Rodrigues, Brazil: 265 plants (312847).

Herbario Ipean, Brazil: 164 plants (311569); (through Joao Murca Pires): 2 plants (312862).

Hogle Zoological Gardens (through Bernholt W. Palas): orangutan (316641).

Hong Kong, University of (through Dr. Brian S. Morton): 57 crustaceans (293125, 294029, 295278); (through Patsy P. S. Wong): 2 crustaceans (312185).

Hong Kong Agriculture and Forestry Department (through Dr. A. J. L. Mitchell): 10 bamboos (311125).

Hopkins Marine Station (through Dr. Donald P. Abbott): 410+ crustaceans (298236).

Houston, University of (through Dr. Rosalie F. Maddocks): 35 crustaceans (312415, 315013); 118 crustacean slides (312430).

Humboldt Universität zu Berlin, Germany (through Dr. F. Hieke): 4 seed beetles (315747, exchange).

Ichthyological Associates, Inc. (through Dr. Rudolf G. Arndt): 3 barnacles (308179).

Illinois, University of (through Allen Novak): 102 crustaceans (310694); (through Dr. Philip A. Sandberg): 38 crustacean slides (294500).

Illinois Natural History Survey (through Larry M. Page): 7 crustaceans (313650); (through Dr. Donald W. Webb): 13 scorpionflies (311997).

Indian Ocean Biological Centre, India (through Dr. T. C. Gopalakrishnan): 8 copepods (311072).

- Indiana University (through Dr. David G. Frey): 3 crustaceans, 1 slide (313242); (through Dr. Frank N. Young): 19 water beetles (312701).
- Indonesian Geological Survey (through Dr. Darwin Kadar): 19 foraminifera thin sections (313619).
- Institut D'Elevage et de Medecine Veterinaire des Pays Tropicaux, France (through Dr. Lebrun): 14 plants, Bolivia (314236).
- Institute of Systematic Botany, Sweden (through Roland Moberg): 40 lichens (311597, exchange).
- Instituto Botanico, Venezuela: 4 plants (311652, exchange); (through Dr. Getulio Agostini): 294 plants (311563, 311590, 311613, 311615, 312227, 312811, 312861, 313528, 313549); (through Dr. F. A. Delascio): 6 plants (311567); (through Dr. G. Morillo): 64 plants (311628, 311635); (through Dr. Julian A. Steyermark): 435 plants (311140, 311141, 311146, 311172, 311559, 311562, 311627, 312270, 312314, 312831, 313534, 313552, 313607, 314194); 70 plants (312317, 313525, gift-exchanges; (through S. Tillet): 44 plants (312805).
- Instituto de Aclimatacion de Almeria, Spain (through Dr. Antonio Cobos): 5 wood boring beetles (315534).
- Instituto de Biologia Marina, Argentina (through Jorge L. Fenucci): 4 crustaceans (312219, exchange).
- Instituto de Botanica, Brazil: 21 plants (313616); (through Marilza Cordeiro Marino): 63 plants (311588, exchange).
- Instituto de Botanica Darwinion, Argentina (through Dr. Arturo Burkhart): 100 plants (311618, exchange).
- Instituto de Ciencias Naturales, Colombia (through Dr. Enrique Forero): 40 plants (314184).
- Instituto de Defesa do Patrimonio Natural, Brazil (through Luiza Thereza Deconto Dombrowski): 34 plants (311159, 312289, 314208, 314915).
- Instituto de Investigaciones Pasqueras, Spain (through Dr. R. Margalef): 60 ostracods (304284).
- Instituto de Pesquisas de Marinha, Brazil (through Dr. Solange C. De Saint-Brisson): 105+ crustaceans (314046).
- Instituto di Biologia del Mare, Italy (through Dr. Brigitte Volkmann): 6 crustaceans, 1 slide (310236).
- Instituto Oceanografico de la Armada, Ecuador (through Manuel Cruz Padilla): 34 marine mollusks (309735).
- Inter-American Tropical Tuna Commission (through Dr. Witold L. Klawe): 1,440+ crustaceans (248287).
- Interior, U.S. Department of the: *Bureau of Land Management* (through J. W. Young): 2 crayfish (290734). *Fish and Wildlife Service*: 374 bird skins, 56 bird skeletons (316700); (through Harvey R. Bullis, Jr.): 2,610+ crustaceans (232276); 1,750 echinoderms (257263); (through R. Bruce Bury): 30 reptiles and amphibians (313139); (through Jack L. Dean): 128 crustaceans (266244); (through Dr. Fred P. Meyer): 706 crustaceans (290206); (through Dr. Ramsey): 258 crustaceans (307033); (through Carl Saloman): 10 crustaceans (269790); (through Dr. Donald E. Wilson): 4,629 mammals (316645). *U. S. Geological Survey* (through Dr. John W. Adams): 3 minerals, 4 vials (313005); (through Dr. W. A. Cobban): 142 ammonites, 3 pelecypods (310920, 310993, 311948, 314154); (through Dr. George A. Desborough): 2 mertieite (313154); (through Dr. Bruce R. Doe): 27 rocks (311764); (through Dr. Raymond C. Douglas): 9 fusulinid thin sections (315295); (through Dr. Richard C. Erd): 2 minerals (311940); (through Dr. John Hanley): 10,000+ fossil mollusks (313644); (through Dr. Joseph E. Hazel): 50,000 fossil mollusks (313643); 200 fossil ostracodes (315895); (through Dr. Ralph Imlay): 606 ammonites and bivalves (314805, 314406); (through Dr. Harry S. Ladd): 19 barnacles (311358); (through Dr. J. D.

Love): 17 fossil mollusks (315155); (through Ralph L. Miller): 12 calcareous concretions (311761); (through Mary Mrose): 65 minerals, 4 vials (310147, 310149, 310150, 311000); (through Mary Mrose and Dr. Michael Fleischer): 34 minerals, 2 vials, 1 lot (313795); (through Dr. R. B. Neuman): 9 fossil brachiopods (313273); (through Dr. David M. Orchard): 19,250 fossil invertebrates (313881); (through Dr. Arthur Radtke): 1 frankdicksonite (315016); (through Dr. Charles A. Sandberg): 154 conodonts (312968); (through Dr. Harold I. Saunders): 31 quartz crystals (311956); 2 trilobites (315896); (through Dr. I. G. Sohn): 9 crustaceans (314768); 10 crustacean slides (315150); (through Dr. Michael E. Taylor): 205 eocrinoids (312558); (through Dr. Frank C. Whitmore): 3 marine mollusks (312130).

Iowa State University (through Dr. Richard W. Pohl): 4 plants (314280); 28 plants (314954, exchange); (through Dr. Milton W. Weller): 2 duck skins (312030).

Jacksonville University (through Dr. Kenneth Relyea): 1 crustacean, Florida (311015).

Jardim Botânico do Rio de Janeiro, Brazil: 11 plants (311634).

Jardin Botanique National de Belgique, Belgium (through Dr. A. Lawalree): 695 ferns (315805, exchange).

Jersey City State College (through Dr. George A. Schultz): 2 crustaceans (315598).

Jewel Tunnel Imports (through Rock H. Currier): 1 krennerite, Fiji Islands (310189).

Johns Hopkins University (through Dr. John R. Oppenheimer): 15,002 insects, Asia (315208).

Kansas State University (through Dr. T. M. Barkley): 40 plants (314196).

Kenyatta University College, Kenya (through K. W. Turgeon): 4 crustaceans (310436).

Kerckhoff Marine Laboratory (through Dr. John S. Pearse): 72+ crustaceans, Egypt (276106).

Kihard Institute for Biological Research, Japan (through Dr. Hiroski Hatta): 11 plants (311568).

Kobe University, Japan (through Dr. Tukahiko Naito): 61 sawflies (314789, 316155, exchanges).

Kyoto University, Japan (through Gen Murata): 150 ferns and phanerogams (313598, exchange).

Kyushu University, Japan (through Dr. Keiji Baba): 12 crustaceans (311551).

Laboratorio di Tecnologia della Pesca, Italy (through Carlo Froglio): 92 crustaceans (314402); (through Carlo Froglio and partially collected by Smithsonian personnel): 229 echinoderms, 151 worms, 5 brachiopods, 4,866+ crustaceans, 212 mollusks (312186).

Laboratorios de Botanica Lorenzo R. Parodi, Argentina (through Dr. Elisa Nicora): 1 bamboo (311145).

Laredo Police Department, Texas (through W. V. Weeks): 1 lot human skeletal remains (316538).

Leeds, University of, Great Britain (through Dr. John Grahame): 4 crustaceans (315151); (through W. A. Sledge): 7 ferns (312266).

Longwood Gardens (through Dr. Donald G. Huttleston): 5 plants (312291).

Las Cruces Tropical Botanical garden and field station, Costa Rica (through Bruce W. McAlpin): 142 ferns (315801).

Los Angeles County Museum (through Dr. James H. McLean): 3 marine mollusks (311520); (through Abigail Roseman): 15 scarab beetles (313896); (through Roy R. Snelling): 18 ants (313331); (through Gale G. Sphon): 1 marine mollusk (310468).

Louisiana State University (through Dr. Raymond W. Bouchard): 7 crayfish (309419).

- Lyko Mineral and Gem, Inc. (through Jack R. Young): 61 minerals (310443, 310988, 311313, 313073, 315176, exchanges); 13 minerals (311954, 312464, 313443).
- Maine, University of (through John Dearborn): 9 echinoderms, Greenland (313619).
- Maine Department of Inland Fisheries and Game (through Dr. Philip S. Andrews): 75 crustaceans (292993); (through Dr. Donald F. Mairs): 115 crustaceans (274877).
- Malaya, University of (through Dr. Benjamin C. Stone): 3 plants (311601, exchange).
- Manazuru Marine Biological Laboratory, Japan (through Dr. Hiroshi Suzuki): 2 crustaceans, 1 slide (310187).
- Marie Selby Botanical Gardens: 77 plants (311593).
- Marine Biomedical Institute (through Dr. Ned E. Strenth): 12 crustaceans (315923).
- Marine Research Foundation (through Dr. Richard H. Chesher): 1 echinoderm, Barbados (313181).
- Massachusetts, University of: *Herbarium* (through Dr. Albert C. Smith): 4 plants (310342).
- Max-Planck Institut fur Limnologie, Germany (through Dr. Peter Havelka): 18 biting midges (316320).
- McGill University, Canada (through Dr. Ken Able): 16 fish (314473).
- Miami, University of (through Martha B. Meagher): 3,200 plants (310337); (through Dr. Oscar T. Owre): 1 bird skin (312641, exchange). *School of Marine and Atmospheric Science* (through Larry Abele): 491+ crustaceans (296573); (through Dr. Frederick M. Bayer): 461 crustaceans (267410); 53 echinoderms (312749); 3 marine mollusks (314028); (through Phillip Heemstra): 6 crustaceans (294928); (through Barbara S. Mayo): 144 crustaceans (311209); (through Dr. Patricia A. McLaughlin): 169+ crustaceans (306092, 306709, 311232, 312585); 1 marine mollusk (311283); (through Dr. A. H. Provenzano): 75 crustaceans (256552); (through Dr. C. R. Robins): 1 fish (308429); (through Dr. Gilbert L. Voss): 6 crustaceans (267897); 9,200+ echinoderms (296540).
- Michigan, University of: *Museum of Zoology* (through Dr. Robert R. Miller): 66 crustaceans (282944); 10 freshwater mollusks, 757+ crustaceans (311357); 3 fish (314752).
- Minerals and Gems: 3 lots minerals (312189).
- Minnesota, University of (through Dr. Edwin F. Cook): 2 wasps (313897, exchange).
- Mississippi State University (through Dr. Glenn H. Clemmer): 6 insects, 451+ crustaceans (314022).
- Missouri Botanical Garden (through Dr. Thomas B. Croat): 144 plants (311576, 311651, 312832, 312864, 314216, 314909); 289 plants (312830, 314181, exchanges).
- Missouri, University of (through Dr. Richard J. Gentile): 3 invertebrate fossils (311715).
- Modena, University of, Italy (through Dr. E. Gallitelli): 35 brachiopods (316024, exchange).
- Moorhead State College (through Dr. Oscar W. Johnson): 2 bird skins, 1 bird mummy, Eniwetok (315103).
- Moscow, State University of, USSR (through Dr. L. I. Fedoseeva): 38 flies (313694, exchange).
- Museo Nacional de Historia Natural, Chile (through Dr. Maria Codoceo): 21 mollusks (313648).
- Museo Nacional de Historia Natural, Uruguay (through Dr. Miguel A. Klappenbach): 65 marine mollusks (311427, exchange).
- Museum National D'Histoire Naturelle, France (through N. Halle): 43 grasses

(314881, exchange); (through Dr. J. C. Hureau): 2 crustaceans (315927); (through Dr. Dominique Y. Jerome): 1 meteorite (306073, exchange); (through Dr. Christian Jouanin): 2 bird skins (310101, exchange); 160 plants (311589, gift-exchange); (through J. F. Leroy): 41 plants (312787, exchange); (through Dr. R. Letouzey): 14 plants (311636); (through Alicia Lourteig): 59 plants (312794, gift-exchange).

Nairobi, University of, Kenya (through Dr. J. C. Hillman): 3 isopods (311073).

Natal Museum, South Africa (through R. M. Kilburn): 20 mollusks (310567).

National Institute of Oceanography, Great Britain (through Dr. Peter Foxton): 7 crustaceans (294817).

National Museum, Philippines (through Hermes G. Gutierrez): 177 plants (312829).

National Museum of Natural Sciences, Canada (through J. M. Gillett): 50 plants (314947, exchange).

National Museum of New Zealand (through Dr. Logan Hudson): 6 beetles (310964, exchange).

National Museum of Victoria, Australia (through Dr. Arthur Neboiss): 14 crayfish (273952, exchange).

National Science Museum, Japan (through Dr. T. Nakane): 2 water beetles (316278, exchange); (through Dr. Shun-Ichi Ueno): 1 water beetle (316275, exchange); (through Dr. Akiro Kato and S. Matsubara): 4 minerals (311941).

National Taiwan University (through Dr. Sze-Jih Hsu): 29 sawflies (312906, exchange).

National University de La Plata, Argentina (through Dr. R. C. Whatley): 35 ostracods on 1 slide (301151).

Naturhistoriska Riksmuseet, Sweden: 332 plants (312828, exchange).

Nebraska Game and Parks Commission (through D. B. McCarraher): 250+ copepods (299206).

New Mexico, University of (through Dr. Klaus Keil): 1 meteorite (312031, exchange).

New Mexico State University (through Dr. Richard Spellenberg): 162 plants (309180, 312325, exchanges).

New South Wales, University of, Australia (through Charles Pregoner): 5 crustaceans (313274).

New York Botanical Garden (through Dr. Patricia K. Holmgren): 775 plants (308662, 313557, gift-exchanges); 378 plants (310339, 311178, 314228, 314232); 1,255 plants (311655, 314248, 314927, exchanges).

New Zealand Department of Scientific and Industrial Research (through Dr. Janet Bradfor): 4 copepods, 2 slides (291952).

Newark Museum (through Kenneth L. Gosner): 172 crustaceans (279465).

Newcastle Upon Tyne, University of, Great Britain (through Dr. John Allen): 8 crustaceans, Canary Island (312751).

North Carolina State University (through Dr. James W. Hardin): 51 plants (311617, exchange); (through Dr. Clyde F. Smith): 18 aphid slides (311362, exchange).

North Carolina, University of (through Dr. J. F. Matthews): 18 plants (310344); (through Dr. Edward F. Menhinick): 3 fish (309440). *Institute of Fisheries Research* (through Dr. Frank J. Schwartz): 15 crayfish (313914); (through Dr. Austin B. Williams): 2,015+ crustaceans (310561, 313797).

Northeast Louisiana University (through R. Dale Thomas): 130 plants (314230).

Northern Arizona University (through Dr. C. D. Johnson): 184 seed beetles (312702, 316058).

Northern Illinois University (through Dr. David W. Greenfield): 5 fish, British Honduras (309327).

Northern Iowa, University of (through Dr. Nixon Wilson): 53+ crustaceans (312594).

Office de la Recherche Scientifique et Technique Outre-Mer, France: *French*

- Guiana*: 5 plants (311109); 4 araceae (311173); (through Dr. J. J. deGranville): 10 plants (310320); (through J. P. Lescure): 29 plants (311160).
Madagascar (through Dr. Alain Crosnier): 5 crustaceans (312202); 20 crayfish, 5+ worms (316000).
 Ohio Department of Health (through Dr. Richard L. Berry): 9 mosquitoes (316287).
 Oklahoma, University of (through Dr. Jeffrey H. Black): 19 crayfish (293911).
 Old Dominion University (through Dr. John R. Holsinger): 33 crustaceans, 1 slide (312103, 313110).
 Oregon, University of (through Sylvia Behrens): 17 marine mollusks (310990).
 Oregon State University (through Pongthep Akrananukul): 2 honey bees (316056); (through Dr. N. H. Anderson): 20 caddisflies (313337); (through Kenton L. Chambers): 100 plants (312833, exchange); (through Earl E. Krygier): 23+ crustaceans (312431); (through Dr. John C. McCain): 3 crustaceans (279430); (through Gary L. Peters): 15 beetles (313285, exchange); (through Dr. William E. Stout): 35 crustaceans (279466, 290551); (through Patricia Tester): 50+ crustaceans (313665); (through David R. Voht): 4 crustaceans (292348).
 Otago, University of, New Zealand (through Dr. Betty J. Batham): 19+ echinoderms (295864, 297794).
 Pacific Bio-Marine Supply Co. (through R. C. Fay): 4+ echinoderms (305462).
 Pacific, University of the (through Dr. William B. Gladfelter): 5 crustaceans (305250).
 Pala Properties International, Inc. (through William Larson): 5 minerals (310148, 313076, 315177); 15 minerals (308801, 313981, exchanges).
 Palermo Mine Enterprises (through Forest F. Fogg): 1 strunzite (313757); (through Robert Whitmore): 3 minerals (315182).
 Panama, University of (through Juan B. Del Rosario): 19 marine mollusks (308340).
 Papua and New Guinea Department of Forests: 444 plants (311598, 314252); 134 plants (314951, exchange).
 Plant Protection Research Institute, South Africa (through Dr. Yair Ben-Dov): 11 armored scale slides (311894, 314050); 5 scales (312006).
 Plumbago Mining Corp. (through Dean McCrillis): 2 minerals (311932, 311937).
 Postal Service, U.S. (through E. H. Rapee): 1 marine mollusk (306531).
 Puerto Rico, University of (through Luis R. Almodover): 89 algae (314222, exchange); (through Dr. Carlos J. Carrera): 4 echinoderms (303634); (through Ron J. Larson): 120+ crustaceans (311930); (through Jorge Rivera-Lopez): 3 crustaceans (270230).
 Purdue University (*see* Donors to the National Collections, Individuals: Montgomery, Dr. B. E.).
 Queensland Herbarium, Australia: 117 plants (314197, exchange); (through L. Pedley): 49 plants (305019, exchange).
 Rancho Santa Ana Botanic Garden: 212 plants (310372).
 Rider College (through Dr. Mervin Kontrovitz): 17 crustacean slides (314401).
 Rijksmuseum van Natuurlijke Historie, The Netherlands (through Dr. L. B. Holthuis): 23 crustaceans (306038).
 Rijksuniversiteit te Utrecht, The Netherlands: 145 plants (312848, 312849, 314256); (through Dr. Hans de Bruijn): 3 fossil mammal casts (315023); (through Antoine M. Cleef): 69 plants (314943); (through Dr. Paul J. Maas): 43 plants (311142, gift-exchange).
 Riyadh, University of, Saudi Arabia (through Iyad A. Nader): 2 crustaceans (311522).
 Royal Botanic Garden, Scotland: 3,700 plants (305571, 312239, exchanges).
 Royal Botanic Gardens, Australia: 109 plants (312827, exchange).

Royal Botanic Gardens, Great Britain: 480 plants (310319, 311594, 312842, 313570, 314945, 314952, exchanges); (through Dr. P. Green): 70 plants (305573, exchange); (through R. M. Harley): 15 plants (314885).

Ruder Boskovic Institute, Yugoslavia (through Dr. Zdravko Stevcic): 2 bryozoans (306781).

St. Joseph's College, India (through Dr. Cecil J. Saldanha): 2 vials plants (310329).

St. Lucia Research and Control Department (through Guy Barnish): 35 crustaceans (301895, 304428).

Salisbury Zoo (through Stefan H. Graham): 1 mammal (316642).

San Antonio Zoological Park and Aquarium (through Dr. Clyde Jones): 1 mammal (316640).

San Diego Zoological Gardens (through Dr. Clyde Hill): 13 mammals (313044).

Savannah Science Museum (through Gerald K. Williamson): 175+ crayfish (293941).

Sea Life Park (through Edward Schallenberger): 2 dolphins (316807).

Southampton Paleontology Club (through R. F. Correia): 1 partial fossil whale skull (315981).

South Carolina, University of: *Institute for Marine Biology and Coastal Research* (through Dr. Bruce C. Coull): 30 copepods (311842); (through William Lang): 6 crustaceans (314763).

South Carolina Marine Resources Research Institute (through Dr. Frank W. Stapor, Jr.): 1 rock (314812).

South Carolina Wildlife and Marine Resources Department (through David M. Cupka): 10 copepods (309713).

South Florida, University of (through Dr. Robert W. Long): 5 ferns (310391); (through Dr. Richard Wunderlin): 21 plants (315814).

Southeastern State University (through Dr. John Taylor): 1 algae (312768).

Southern California, University of: *Allan Hancock Foundation* (through Dr. Robert R. Given): 1 holothurian (293332); (through Mary K. Wicksten): 14 amphipods (312528). *Los Angeles Campus* (through Dilworth W. Chamberlain): 10 crustaceans (310862); (through Dr. Robert L. Fleisher): 95 foraminifera slides (311456).

Southern Mississippi, University of (through R. Danny Weaver): 5 crustaceans (310863).

Southern State College (through Dr. Henry W. Robison): 479+ crustaceans (311231); 1,615+ crustaceans, 1 worm (311860).

Southwest Research Institute (through James H. Baker): 8 ostracodes, 8 slides (313766).

State, U. S. Department of (through Jane A. Guilbault): the Humphrey diamond (313080); (through John M. Thomas): 21 marine mollusks (311748).

Staten Island Community College (through Dr. Joseph Vagvolgyi): 10 amphipods, Galapagos Islands (311017).

Station de Recherches de Zoologie, Guadeloupe (through Dr. M. F. Chalumeau): 5 beetles (315201, exchange).

Sul Ross State University (through A. M. Powell): 34 plants (313523).

Summer Institute of Linguistics: 46 ethnological items, Ecuador (313670).

Tel-Aviv University (through Dr. Al Barash): 39 cephalopods (286809); (through Dr. Dan Gerling): 25 bees (315237).

Teledyne: *Brown Engineering* (through Robert H. Strickler): 17 crustaceans (313447).

Tennessee, University of (through Dr. Otto C. Kopp): 1 vial corrensia-bearing shale (313135).

Tennessee Department of Public Health (through Rick Sinclair): 1 crustacean (309526).

- Texas, University of (through Dr. James E. Blankenship): 2 marine mollusks (312515).
- Texas A & I University (through Dr. Jack A. Rickner): 5 crustaceans (311755, 314721).
- Texas A & M University (through Rob Abbott): 3 echinoderms (311317); (through Donald E. Harper, Jr.): 27 isopods (310067); (through Dr. R. R. Murray): 49 tiger beetles (312551, exchange); (through Dr. Taisoo Park): 30 crustaceans (312492).
- Texas Christian University (through Dr. Joseph C. Britton): 1 crustacean (313244).
- Texas Speleological Survey (through James Reddell): 3 isopods, Mexico (259730).
- Tokyo, University of, Japan (through Hiroyoshi Ohashi): 113 plants (312819, exchange); (through Dr. M. Omori): 13 crustaceans (312098).
- Treasury, U.S. Department of the: *Bureau of Customs*: 2 chests, wall panels, screens, 2 gem trees (307840); 21 serpentine carvings (311939); 1 pair wooden shelf cabinets, Japan (313309).
- Tulane University (through Dr. Royal B. Sutkus): 20 fish (314718); (through Dr. Emily H. Vokes): 24 fossil invertebrates (315044).
- Tulsa, University of (through Dr. Albert P. Blair): 2 crayfish (305421).
- Tuskegee Institute (through Dr. James D. Williams): 134 crayfish, Alabama (310233).
- Ukrainian Academy of Sciences, USSR (through Vassily P. Pegueta): 59 fishes (312501, exchange).
- Universidad Central de Venezuela (through Victor M. Badillo): 2 plants (314250).
- Universidad Nacional de Colombia (through Enrique Forero): 1 compositae (312799).
- Universidad de los Andes, Venezuela (through Santiago Lopez-Palacios): 16 plants (314917); (through Dr. L. Ruiz Teran): 63 plants (313579).
- Universidad de Oriente, Venezuela (through Dr. Aljadys Gonzalez): 12 marine mollusks, 1 crustacean (313802).
- Universidad Nacional del Nordeste, Argentina (through Antonio Krapovickas): 73 plants (312816, gift-exchange); 73 plants (312817); (through Dr. Camilo L. Quarin): 89 plants (310357).
- Universidad Nacional Mayor de San Marcos, Peru (through Berta Herrera de Loja): 8 plants (314266).
- Universidade de Sao Paulo, Brazil (through Dr. Tagea K. S. Bjoinberg): 2 copepods (310529); (through Dr. Luiz Roberto Tommasi): 11+ sponges (295301).
- Universidade do Brazil (through Dr. Helmut Sick and William Belton): 1 Arctic bird skin (310203, exchange).
- Universidade do Parana, Brazil (through Pe. J. S. Moure): 6 beetles (312675).
- Universidade Federal do Rio de Janeiro, Brazil (through Paulo Occhioni): 433 plants (314193, 314214, 314937).
- Universita di Messina, Italy (through Pietro Crisafi): 59 copepods (293277).
- Universita di Torino, Italy (through Dr. Pietro Passerin d'Entrevès): 2 small moths (314055, exchange); (through Dr. M. Zunino): 50 dung beetles (312337, exchange). *Instituto Botanico*: 3 plant photographs (311163).
- Universitat Basel, Switzerland (through T. Reichstein): 5 plants (310389, 313543).
- Universitat Heidelberg, Germany (through Dr. W. Rauh): 46 plants, South America (314201).
- Universite de Paris, France: 2 minerals (312894, exchange); (through Dr. Pierre Bariand): 1 vanadinite (296221, exchange); (through Marie-Claude Gullaumxe): 3 crustaceans (312356).

- Universite des Sciences et Techniques du Languedoc, France (through J. P. Quignard): 368 crustaceans (315290).
- Universiteit van Amsterdam, The Netherlands (through Drs. J. H. Stock and S. Pinkster): 2,036+ crustaceans (289522, exchange); (through Dr. R. W. M. van Soest): 5 echinoderms (314769).
- Universitetet I Bergen, Norway (through Dr. Torliev Brattegard): 55 crustaceans, 55 slides (312529).
- Universitetets, Denmark: *Geologiske Instituter og Mineralogisk Museum* (through Dr. Niels Hald): 2 gneiss specimens (305731, exchange).
- University College, Ireland (through Dr. L. N. Gupta): 2 granite specimens, 2 granite thin sections, 1 lot mica chips (313006).
- University College London, Great Britain (through Dr. Eric Robinson): 2 ostracod slides (313246).
- University College Swansea, Great Britain (through Dr. A. A. Myers): 2 amphipods (275981).
- University for Agriculture, the Netherlands (through J. de Bruijn): 88 plants, Venezuela (309230).
- Ustredni Ustav Geologicky, Czechoslovakia (through Dr. Vladimir Havlicek): 100 brachiopods (310923, exchange).
- Utah, University of (through A. R. Farr): 14 plants (313604, gift-exchange).
- Ute Mountain Gem and Mineral Society (through Regina L. Brewer): 15 dinosaur bone cabochons (313749).
- Vanderbilt University (through Dr. James J. Friauf): 17 crustacean slides (311071). *Herbarium* (through Robert Kral): 129 plants (311180, exchange).
- Velco Importers (through G. J. Velick): 10 Bromeliaceae (314276, 314277, 314278, 314279).
- Victoria University of Wellington, New Zealand (through Dr. J. A. F. Garrick): 46 fishes (312460).
- Virginia Commonwealth University (through Arthur J. Seidenberg): 25 isopods (283228).
- Virginia Institute of Marine Science (through Dr. John Kraeuter): 2 crustaceans (314133); (through Dr. Jack Musick): 72 worms (314690); (through Dr. Franklin D. Ott): 78 algae (314224); (through Robert W. Virnstein): 40+ polychaetes (312632).
- Virginia State Library (through Dr. C. G. Holland): 2 lots human skeletal remains (316541); (through Col. Howard A. MacCord): 20 lots human skeletal remains (316301, 316542).
- Washington, University of (through Gayle A. Heron): 508 crustaceans (310221); (through Dr. Paul Illg): 15 crustaceans (294572); (through Arthur E. Siebert, Jr.): 4+ sea anemones (305293).
- Washington State University (through Martin Harris): 9 copepods (313396).
- Western Australian Museum (through Clay Bryce): 31 marine mollusks (316098, exchange); (through Dr. L. E. Koch): 1 crustacean (311843, exchange).
- West Virginia University (through Howard W. Hoffman): 75+ crustaceans (310528).
- Wisconsin, University of: *Herbarium*: 233 plants (313541, exchange); (through Dr. Hugh Iltis): 48 plants (312815, 314884).
- Woods Hole Oceanographic Institution (through Susan P. Garner): 500+ crustaceans (315706); (through Dr. George D. Grice): 4 crustaceans (315707); (through Dr. Richard L. Haedrich): 1,066+ crustaceans (312671); (through Dr. Robert R. Hessler): 29 crustaceans, 16 slides (280697); (through Dr. Gilbert Rowe): 11+ echinoderms (313777); (through Mrs. Amelie Scheltema): 5 marine mollusks (315521).
- Yerkes Regional Primate Research Center (through Dr. Geoffrey H. Bourne): 2 chimpanzees (316033).

Zoological Survey of India (through Dr. G. Ramakrishna): 39 crustaceans
(303869, exchange).

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Gitter, Kurt: Japanese calligraphy by Mokuan (d. ca.1348).
Helms, Cynthia: Shards from Iran.
Iran: Two movie reels (from Persepolis) of the celebration of the 2500th
Anniversary of the Founding of the Persian Empire.
Klein, Leonard: Album of Chinese paintings; Ch'ing dynasty, mid-17th
century; by Sun Huang.
Pope, John A.: Shards from Japan.
Rothchild, Louis S.: Chinese celadon bowl; Ming dynasty, A.D. 1368–1644.

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- Land Transportation Fund: Union membership certificate, inspection torch, conductor's lamp, drinking cup (315303); china plate, silver plate, railroad ticket (315319); locomotive feed water heater patent model (315320); conductor's cap (315445).
- Mary E. Maxwell Fund: stoneware jar (312530); pottery bowl (312531); pottery jug (312532); stoneware pitcher (312533); side chair (312534); stoneware jar and earthenware churn (312535); side chair (312536); stoneware pot (312559); 2 jars (312560); 2 stoneware jugs (312561); rocking chair (313809); armchair, 3 jars, stoneware pitcher (313861); earthenware candlestick and vase (314591); earthenware preserve pot (315338); 3 stoneware jars, 2 baskets (315339); 2 stoneware jugs and milkpan, earthenware pot and stove rest (315350); stoneware crock (315351); stoneware jug (315353); stoneware jar (315354); cast iron stove (315355); stoneware churn (315356); jar (315357); Shaker peg board (315363).
- Alfred Duane Pell Fund: Delft bowl, England, circa 1750 (312733).
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- Chamberlain Fund: 27 mollusks, Tonga (295734); 1 elbaite crystal section, Maine (311955); 1 faceted anglesite, Namibia (313754).
- Drake Fund: 2,113 Hemiptera, Africa (309980). (*see also* Casey Fund).
- Roebling Fund: 1 cut natrolite, New Jersey (308096); 2 uralolites, Maine (311938); 3 beryl, 1 muscovite, 2 schorl, New Hampshire (311942); 24 minerals, worldwide (311974); 1 arsenopyrite, Mexico (312187); 1 apatite and 1 barite, Mexico (312463); 1 copper, 2 quartz, 2 fluorite (313081).
- Springer Fund: 5 slabs with 35+ invertebrate fossils, Utah (311200).

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- Aldridge, Jeanne M.: woman's dress and jacket, circa 1947 (311814).
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- Albree, G. Norman: lantern clock, wedding spoon, circa 1700 (314557).
- Allen, Mr. and Mrs. duVal: American flag hammock (312100).
- Allen, Mrs. Genevieve L.: woman's dress, skirt, and 2 bodices, circa 1857 (313300).
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- Anonymous: woman's suit and shoes (309428); Ku Klux Klan wooden cross (313389); autograph of Oliver Wendell Holmes and Theodore Roosevelt (314574); 38 pieces of Art Nouveau and Art Deco glass and pottery (314609); 184 die proofs (314632); 6 Chinese ceramics (314663).
- Apfelbaum, Stanley: Massachusetts Colony note, 1775 (313375).
- Arnhold, Henry: porcelain cup and saucer, circa 1775 (312079); Meissen box and cover, circa 1734 (314605).
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- Battelle, Kenneth E.: man's suit, 1966 (311811).
- Batthey, Galen B., Jr.: 15 men's apparel items (309087).
- Baumbusch, Raymond G.: men's swim trunks and golf socks (309316).
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- Bear, Fred: 2 bows, 2 quivers, arm guard, carrying case, 13 arrows (306700).
- Becker, Ralph E.: 10,516 political history items (315128).
- Bell, Dr. Whitfield J., Jr.: halfpenny copper token (311819).
- Belter, George G.: 4 Spanish-American War military items (311475).
- Bent, Mr. and Mrs. Allen E.: 2 men's shirts, 2 woman's skirts, necklace, and blouse (309933).
- Bergwin, Lark: 4 religious pamphlets, 12 prints (312498).
- Berhalter, Joseph: 3 men's suits, 3 ties (313476).
- Berkebile, Don H.: spurs, tire chains, wheel barrow, air pump, cart harness (315443).
- Bernath, Mrs. Clara: textile sampler (315380).
- Bernhard, Helen D.: 4 pairs women's shoes (313480).
- Berry, Mrs. Madeleine Curtis: 2 silver serving spoons (312371).
- Bishop, W. H.: man's suit, 2 ties (313478).
- Blaisdell, Earl: 7 ancient silver coins (314077).
- Blend, John: wall clock (311322).
- Blick, Edward A.: 33 toy soldiers, toy horse (311859).
- Block, Albert and Ruth S.: 2 apparel display forms (313294).
- Blomquist, Dr. Olov A.: flexible gastroscope and Oak box (315417).
- Blumenthal, Sol and Deborah: 5 cookie cutters (312101).
- Bode, Henry W.: woman's dress, 1936 (308605).
- Bojarinow, Boris (through Kathleen Henry): 16 decorative eggs (314474).
- Boling, Margaret: slate, in memory of Cuyles Orland Boling (311461).
- Boulemtaf, Henry T.: World War I uniform and accessories (311909); Kodak camera (312711).
- Bours, Mrs. Elizabeth W.: 3 women's dresses, circa 1930 (313218).

- Boyd, John J.: magneto generator, 1840 (313184).
- Boyer, Mrs. Ivan: 6 wearing apparel items, 1960s (310533).
- Boyle, T.: telegraph register (312604).
- Bozardt, Leon R.: Robot camera (315246).
- Bradshaw, Lilyan B. (through Mrs. Barbara Waite): smallest envelope to ever pass through the postal service, 1909 (315318).
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- Brelin, Mrs. I. G.: 10 clothing and accessory items (309738).
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- Brown, Sandra L.: women's shoes, circa 1945 (312971).
- Broyles, Kenton H.: 2 hoods, 2 robes, Ku Klux Klan (312737); 7 political history items (313391).
- Bruns, Mrs. Marie (through Mrs. Alicia Dillon): woman's racoon coat, 1928 (308576).
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- Bullowa-Moore, Mrs. Catherine B.: 70 ancient coins (312037); 3 storecards, 1 medal (313351); galvanos of Milan medal, Columbian Exposition, 1893 (315250).
- Burger, Honorable Warren E.: printer's proof, *United States vs Nixon Et Al* (315127).
- Campbell, Edwin Cooley, and Reed, Mrs. Cloyce Cooley Campbell: cotton quilt, 19th-century (314088).
- Cantrell, Mrs. Catherine: 2 gold badges, 2 silver medals, silver plaque (314569).
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- Cartwright, Charles Copp, and Cox, Mrs. Martha Cartwright (through Mrs. Lorraine T. Meyers): embroidered counterpane (314089).
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- Chambers, Mrs. Sam A.: man's knickers (309140).
- Chapin, Lavine A.: woman's dress, 1958 (309687).
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- Cleveland, Mrs. Emma McKeith (see McKeith, Bertha).
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- Cohen, Mrs. Marianne: 2 revolvers, 1 holster, in memory of George S. Chase (311479).
- Colbert, Russell DeWitt: man's pants, shoes, shirt, 1967 (310280).
- Coles, Charles H.: wooden lantern slide camera, 19th-century (314533).
- Collins, Herbert R.: U.S. House of Representatives arm chair, 1902-12 (300282); lighting fixtures, candle holder, food warmer (308112).

- Combest, Mrs. Frank A.: woman's beach pajamas and sunbonnet, 1928-1929 (309429).
- Conger, Paul S.: 11 medical science items, in memory of William J. Whiting (312619).
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- Cooper, Mr. and Mrs. Sanford L.: knitted infant's cap (315381).
- Cope, Mrs. Marjorie A.: 14 National Guard insignia and service medals (313187); National Guard bronze Faithful Service medal (313342).
- Cordrey, Mr. and Mrs. E. E.: 2 phonograph reproducers, Bristophon, and master adapter (315307).
- Courtney, Mrs. Grace H.: 2 scholarship award medals (313341).
- Cox, Joseph: 2 code practice records (311078).
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- Cunningham, Hugh: accouterment plate (314598).
- Curry, Field: telegraph switchboard instructions (312605).
- Daniel, Mrs. J. Irene (*see* Irvin, Lynn J.).
- Darida, Ray: 70 sample U.S. Army and ROTC insignia, World War II (313982).
- Davis, Mrs. Carterette C.: women's suit, 3 hats, 5 pairs shoes (311815).
- Davis, J. K.: 2 political slogan coffee cups (315331).
- Davis, Lawrence R.: crystal radio receiver (311269).
- Deal, David V., Jr.: hand blown glass vase (312081).
- Dearing, Mrs. Arthur H.: 6 Naval uniform items (311391); 3 Naval citations, personal note from Eleanor Roosevelt (312624).
- deChern, Josephine Weaver: 741 Russian Imperial treasury notes (315391).
- DeHart, Mrs. Elsie P.: woman's dress, 1934 (309457).
- Demetros, Mrs. George L.: 5 women's clothing items (309721).
- Dennis, Harry, Jr.: 3 glassware pieces, Sweden (315336).
- Dentino, Janet S.: 7 women's clothing items (309764).
- Diehl, Sandra L. (*see* Fitzgerald, Mrs. Margaret).
- Dillion, Dorothy Vernon; Allison, Mrs. Mildred Dillion; and Shipp, Mrs. Winifred Dillion: cap, apron, admittance ticket (308728).
- Dillon, Mrs. Alicia (*see* Bruns, Mrs. Marie).
- DiSalle, Honorable Michael V.: 4,304 political campaign objects, in memory of Thomas H. Williams (315264).
- Dix, Gertrude: men's golf suit, belt, socks (309143).
- Donohue, Patricia Ann and James Joseph, IV (through James J. Donohue III): 3 bas reliefs of automobiles, 1926 (315451).
- Donohue, James J., III (*see* Donohue, Patricia Ann and James Joseph, IV).
- Dooley, Joseph H.: men's shoes (312890).
- Dougherty, Mrs. Charles E.: silent butler (311418).
- Douglas, Ben M.: 2 early San Francisco scrip issues (315123); American Colonial note, 1776 (315299).
- Douglas, Bruce C.: Ihagee duplex camera (314537).
- Douglas, Mrs. Violet M.: paint box belonging to Archie Roosevelt (315316).
- Doyle, Bernard: converted rifle (307808).
- Drake, Thomas J.: officer's cap, World War II (313923).
- Draper, Mrs. Dorcas J.: woman's dress (308604).
- Drew, Eileen: 2 women's dresses (309725).
- Dring, Mrs. John P. (*see* Clark, Dr. E. Newton).
- Dubie, Mrs. Eleanor Anderson: woman's dress, bodice, blouse (311498).
- Dull, Mary Louise: 10 items of apparel (309765).

- Dunmore, Mildred V.: 37 Army Nurse Corps uniform and insignia specimens, World War II, in memory of Morris Calvin Dunmore (313924).
- Dunn, Arthur Wallace: book, *Admiral George Dewey*, 1899 (314640).
- Dunton, Gardner: metal block for bookplace, circa 1898 (310998).
- Durkin, Elizabeth and Helen: 139 items of dressmaking and trim (315126).
- Dyer, Lucille and Francis K. (through Emil Knoska): rural mail box (315382).
- Dziedzic, Ben (through Mrs. Esther Dziedzic): 19 medical science items (306964).
- Dziedzic, Mrs. Esther (*see* Dziedzic, Ben).
- Earnest, Mr. and Mrs. Paul (through Charles V. Litherland): rural mail box (314627).
- Edbrooke, Gerald (*see* Kessner, Miriam Z.).
- Ellenberger, William J.: 10 costume and furnishing items (314601).
- Elliott, John M.: U. S. Marine Corps blue dress uniform (311679).
- Elswit, Joan Noyes: pottery vase (314608).
- Emerson, William K.: uniform fatigues and accessories (314673).
- Engelbourg, Saul: men's Bermuda shorts (309081).
- Eno, Irene R.: women's dress, hat, and carry-all (309908).
- Erikson, Dr. Edwin B.: Jacquard woven coverlet (313384).
- Evans, Mrs. David: woman's black wedding jacket, circa 1906 (308577).
- Evans, Elliott (*see* Hale, Mrs. Crescent Porter).
- Evans, Timothy: man's jacket, woman's gloves (308578).
- Ewing, Mrs. Claude: woman's suit, 2 feather plumes, blouse, 1921 (309458).
- Exton, Mr. and Mrs. Fred: Mexican blanket (313934).
- Farber, Mr. and Mrs. Daniel: flowed portrait (314538).
- Farrar, Richard S.: Masonic medal (313350).
- Faucett, William R.: rural mail box (314535).
- Fauntleroy, H. E., Jr.: 2 campaign broadsides (315311).
- Fawcett, Mrs. K. F.: newspaper, 1835 (311820).
- Fesperman, John: sermon manuscript, 1847 (311464).
- Finn, Leonard H.: award medal (313376).
- Fitzgerald, Mrs. Margaret (through Sandra L. Diehl): pocket notebook, 1876 (311422).
- Fleischmann, Mrs. Julius: 5 Bermuda shorts, 1 blouse (310279).
- Floyd, Thomas L.: 9 silver medals (315105).
- Foley, Herbert, Jr. (*see* Valenta, Mr. and Mrs. Ronald).
- Ford, John J.: 58 medals and die trials (312712).
- Ford, Johnny: campaign photograph and inaugural address (314622).
- Ford, Richard L.: 60 World War II photographs (311869).
- Forrest, Stephen: Dalton adding machine, 1923 (314559).
- Fountain, Mrs. Leatrice: girl's pajamas, woman's evening dress (309408).
- Fowler, Mrs. Bodine S.: woman's evening dress, circa 1926 (313477).
- Fox, David: multiband radio receiver (312372).
- Freedman, Dr. Hyman M.: Parker sewing machine (314687).
- Freeze, Richard G.: Monroe desk calculator (311886).
- French, G. D. (through Ben L. Morse): rural mail box (314629).
- Funke, Mr. and Mrs. Richard H., Jr.: 7 items of wearing apparel (312972).
- Furman, E. F.: enamel and diamond brooch (313299).
- Furman, M. William: enamel, pearl and diamond brooch (313298).
- Gateley, Mrs. Roy A.: woman's dress, purse, and stockings (30690).
- Gatter, Carl W.: 5 Centennial wooden medals, 1876 (302055).
- Gay, Connie B.: man's suit, shirt, and bow tie, 1956 (311817).
- Gaylord, Helen K.: crystal bowl, 1910 (315257).
- Geiser, Mrs. Grace.: 6 trade catalogs (315420).
- Geoghegan, William E.: Civil War artillery shell (311472); and Thomas, Jesse B.: 3 ship's logs (313186).

Giller, Alfred T.: electric egg stirrer (312606).
 Gilliland, Mrs. Cora Lee: 2 medalets (313344).
 Ginsburg, Cora: 2 printed cotton textiles, 1 shawl (314688).
 Glasier, Mrs. Roger B.: commemorative broadside (311274).
 Goodrow, Mrs. Doris and Saunders, Rev. Winston A.: stationery and post card from the *Lusitania* (312483).
 Gould, Dr. Charles J.: man's suit and tie, 1940 (309906).
 Gould, Mrs. Charles J.: 3 women's dresses (309930).
 Grant, Chapman: divining rod (315453).
 Gray, Mrs. Anna S.: woman's hat, dress, and purse, 1954 (309678).
 Gregg, Mrs. David: 5 medals, opera glass, and daguerreotype relating to Benjamin Pike (312744).
 Gregory, Seth C.: Bowie knife (313470).
 Greibach, Dr. E. H.: 7 medical science items relating to bone conducting hearing aids (312614).
 Greiner, George: policeman's nightstick (313487).
 Griesel, Richard: textile company's promotional book (313382).
 Griffin, Lorne A.: extension light, electrical cords (312354).
 Grimes, Mr. and Mrs. Ralph: wooden dental sign (312965).
 Guest, Mrs. Thomas S.: bound folio of Hullmandell's lithoint patent process, circa 1841 (312032).
 Guggenheimer, Mrs. Mary S.: Northwest coast Indian basket (315394).
 Haar, Mrs. Alfred Ter: woman's swim suit, 1948 (309910).
 Habernickel, M., Jr.: 12 men's ties (313475).
 Hait, Mrs. Russell Hull: Christmas cards, 1940s (312421).
 Hale, Mrs. Crescent Porter (through Elliott Evans): 24 White House design dinner plates (315265).
 Hamelly, Henry: 14 U. S. First-day covers (312721).
 Hammer, Mrs. Jane Ross: woman's sweater, skirt and belt, 1950s (309909).
 Hansen, John: ash tray (314529).
 Hanft, Mrs. Margaret: men's shoes, circa 1920 (309077).
 Harding, Robert S.: men's swim suit and slacks, circa 1960 (309686).
 Haring, Mrs. Douglas G.: revolver, holster and 5 blank cartridges (310854).
 Hartenstein, Mrs. Jessie M.: 67 pieces of pressed glass (314606).
 Hays, Brig. Gen. Anna Mae: woman's wig (311946).
 Hebert, Mr. and Mrs. Raymond J.: 260 financial documents (312039, 312043, 312049, 312062, 312066); 524 coins (312044, 314071, 314075, 314565, 315116, 315119, 315120); 31 numismatic items (312058); 88 coins and medals (314074).
 Hecht, Dr. and Mrs. Rudolph C.: 2 cameras, 1 flashgun (315297).
 Heckman, Harold: boy doll (308345).
 Hedges, Mrs. Agnes B.: 5 religious paper cut-outs (314469).
 Helfrick, Susan K. (through Barbara J. Coffee): 3 political phonograph records (313708).
 Helm, Mrs. Susan: 2 women's dresses, playsuit, suit (310037).
 Helms, T. Roy and Douglas: cotton duster (315454).
 Henry, Kathleen (see Bojarinow, Boris).
 Henchel, Joseph: 4 political history items (310997).
 Henderson, Kenneth W.: Japanese propaganda leaflet, World War II (310049).
 Henes, Mr. and Mrs. George P.: women's drawers and 2 combinations (309407).
 Henke, Louis, Jr.: man's suit, belt, and tie (309144).
 Herd, Janice M.: birth certificate (311458).
 Hill, Mrs. Lida M. (through Edward Kohan): ship model (312368).
 Hill, Peter: 12 window shades, seat covers, 16 wallpaper samples (313926).
 Himmelfarb, Dr. and Mrs. Morris H.: Meissen figure group, 1910 (314094).

Hjemdal, Mrs. Bertha M.: woman's slip (310039).

Hobbs, Mrs. Sara L.: fatigue blouse, Spanish-American War (313473).

Hollerith, Virginia: faradic battery and wooden case (311872).

Holmes, Robert J.: micrometer (314635).

Holst, Donald W.: 6 Colonial Marine uniform plates for recruiting posters (312494); collection of 31 World War II equipment and ROTC insignia (312596); 9 uniform buttons, 1 Marine handbook (313188).

Howell, Charles: electric toaster (311699).

Howland, Dr. Richard H.: Inauguration invitation (314615).

Hronik, R. H.: desk calculator, operating manual, 2 root divisors (313984).

Huckenpahler, Mrs. B. J.: woman's suit, hat, 2 blouses, necklace, and skirt (309950).

Huffman, Mrs. Henrietta: automatic telephone dial (312600).

Huggins, Mrs. June (*see* Panciera, Mrs. Luigia).

Humble, Mrs. Liane: braille slide rule, in memory of Moritz O. Shollmier (313987).

Hunter, Mrs. Myrtle Faulkner, and Carter, Mrs. Maude Faulkner: United Confederate Veterans gilt and enamel badge, 1900 (306799).

Husfloan, Kyle: veterans register (312370).

Irland, Mrs. George A.: woman's watch (315309).

Irvin, Lynn J., Estate of (through Mrs. J. Irene Daniel): telegraph key (311268).

Jenks, Mrs. Miriam B.: beach pajamas (309406).

Jeru-Ahmed, Gen. Hassan: political bumper sticker, press invitation, and poster (314624).

Johnson, Everett M.: toy bank, cane (313933).

Johnston, Mr. and Mrs. Clement M.: 2 White House invitations, 1899 and 1900 (312147); stoneware jar, brass candleholder (312564).

Johnston, Mrs. Virginia H.: 6 costume accessory items (309949).

Johnston, Mrs. George B.: sweater, Bermuda shorts, and girdle (309724).

Jones, William: Red Cross uniform, World War II (314553).

Juelich, Otto: 4 computation seminar proceedings (312144).

Kahane, Mr. and Mrs. Adam: child's ski boots (313239).

Kainen, Mr. and Mrs. Jacob: impressions from pre-Columbian seals (312891).

Kate, Marina: 10 pairs women's shoes and gloves (312203).

Kavruick, Dr. Samuel: 17 medical science items (312611).

Keally, James M., Jr.: 3 panes of commemorative stamps, 1946 (312716).

Keller, Phillips Brooks: watch used by Helen Keller (314555).

Kennedy, Mrs. Agnes M.: 3 identification tags with chain (313989).

Kessner, Miriam Z., Estate of (through Gerald Edbrooke): 41 Worcester porcelain birds, 1 Copenhagen porcelain (310478, bequest).

Ketterer, Frieda C.: 7 men's apparel items (309948).

Kettering, Mrs. Karl: woman's dress and coat, 1941 (309681).

Kidder, Rev. J. Edward: leather bound trunk (314610).

Killinger, Mrs. Elizabeth Coleman: wedding dress, 1935 (313235).

King, Mrs. Blanche Elliot: doll and trunk of doll clothes (308963).

Kissinger, John R., Estate of (through James Van Buskirk): Swiss watch 312739, bequest).

Klaphor, Frank E.: Victorian basket (311419); embroidered bedcover (314084).

Klein, Dr. and Mrs. William H.: rural mail box (314628).

Klinger, Robert L.: men's ice skates (311460); seal press (315117).

Knouff, Lorentz B.: coffee pot with cover, tea pot with cover, circa 1750 (314095).

Knoska, Emil (*see* Dyer, Lucille and Francis K.).

Knox, Mrs. Katherine McCook: clay vase, 1878 (313268).

Kobacker, Arthur: Jacquard coverlet, 1858 (313379).

Koehm, Andrew P.: 2 commemorative buttons (315310).
 Koerner, Matthew G.: man's suit, 1950 (313304).
 Kohan, Edward (*see* Hill, Mrs. Lida M.).
 Kopp, Mrs. Robert: women's dress, jacket and slacks (309934).
 Krahmer, Mrs. A. B.: pennant, 2 pins, World War II (314540).
 Lacy, Gordon: 6 men's ties, 1949-1952 (313240).
 LaFollette, Mrs. Mary: 3 snuff boxes (311493); 6 spectacles (311680); quilt top, beaded bag (313380); 9 political history items (313390).
 Land, Mrs. Ardoth R.: boy's bathing suit, 1926 (309078).
 Lange, Mrs. Myra C.: gym suit, stockings, shoes, 1921 (309405).
 Larsen, Mr. and Mrs. Laurence H.: 3 lithographs of New York (313388).
 Larson, Mrs. Warren F.: men's suit, 1931 (309142).
 Layton, Benjamin T.: 169 foreign coins (313704, 314072); 31 U.S. medals (312702); 56 foreign coins, medals, tokens, and paper currencies (313703).
 LeClere, E. Alan: 1 gasoline engine (315430); Becker talking clock (315433).
 Leigh, Mr. and Mrs. James C.: 999 paper currencies, Chinese (315247).
 Leonard, Mrs. William: 3 pairs men's shoes (313230).
 Leslie, John H.: river steamer model (315419).
 Levin, Mrs. Renee T.: 13 clothing and accessory items (309944).
 Lief, Mrs. Lucy: 6 clothing items (309739).
 Lightner, Clarence B.: 5 political campaign items (314621).
 Lilly, Mrs. Mary Jane: Hardtack soda cracker, World War I (311320).
 Lindquist, H. L.: 14 U.S. gold coins (315112).
 Litherland, Charles V. (*see* Earnest, Mr. and Mrs. Paul).
 Litton, Mrs. Betty E.: woman's coat, 1955 (308574).
 Lobkowitz, Mr. and Mrs. Martin G.: 11 women's apparel items (309945).
 Loomis, Mr. and Mrs. Fred: woman's dress and jacket, man's tie (313303).
 Looney, Charles T. G.: 4 scrip issued by iron companies (315113).
 Loving, Richard S., Jr.: 6 family documents (314667).
 Lucas, Phyllis: lithograph, reproduction poster, album of color etchings (312750).
 Lucy, Mrs. Charles: men's shirt, Bermuda shorts, 1954-1956 (309084).
 Lund, Hillman: 36 items related to the cigar making industry (315458).
 Lyon, Arbrey R.: fishing reel and case (312149).
 Lyon, Mr. and Mrs. Thomas C.: 13 Latin American coins (313705).
 Lyon, Ulysses G.: environmental bumper sticker (314682).
 Mackler, Tina: lithograph (311323).
 Maclay, Mrs. Adele S.: medicine chest and dissecting microscope (315327).
 Mahoney, Charles: Marine fatigue jacket, World War II (311844).
 Makovenyi, Mrs. Nadya: ski poles (313214).
 Malis, Dr. Sol: bronze candelabra, 17th-century, Meerschum pipe bowl (313932).
 Mallock, Mrs. Lettys Eliot: silver teaspoon (312117).
 Markle, Mrs. Frances J.: 8 wearing apparel items (308274).
 Martin, Peter: 6 sheets of Watergate stamps (314616).
 Mason, Walter: 5 numismatic study items (315107).
 Masters, Dr. Arthur M.: set of Masters two step test (312609).
 Mauze, Mrs. Jean: 10 pieces porcelain, 18th-century (313707).
 Maxwell, Mrs. Baldwin: woman's dress and lounging pajamas (312466).
 May, Carl G.: German newspaper front, 1944 (313469).
 Mayo, Edith P.: 8 political leaflets and posters (315313).
 McCaffrey, Mrs. Mary Ellen: 20 Greek coins (312048).
 McCormick, Charles D.: 25 gold coins and decorations (312713).
 McCurdy, Mr. and Mrs. John R.: men's shoes, 1951 (312465).
 McCutcheon, Mrs. James J.: dress belonging to Mrs. Andrew Jackson, Jr. (67902).

McCutcheon, Mrs. Rheta S.: leather boots, 19th-century (304356).
 McGee, Dr. Shanna J.: pewter plate (314470).
 McGraw, Bessy J.: Grand Army of the Republic badge, 1937 (314076).
 McKeith, Bertha and Cleveland, Mrs. Emma McKeith: crocheted bedspread, 19th-century (315125).
 McLindon, William: Cavalry helmet, circa 1880 (313241).
 McMahan, Melvin D. (*see* McMahan, William Henery, Family).
 McMahan, William Henery, Family (through Melvin D. McMahan): damask table cloth (313381).
 Meggers, Dr. Betty J.: 58 Austrian emergency scrips (315106); 10 U.S. wooden nickels and sales tax tokens (315118).
 Merchant, Margery M.: 2 women's swim suits (308606).
 Messenger, Mrs. Ruey: women's suit, 3 dresses (310517).
 Metz, Ken and Robert: silver commemorative bar (313371).
 Metzel, Mrs. Elizabeth C.: woman's dress and coat, 1910 (311813).
 Meyer, Mrs. Alice Z.: woman's snood (309480); Red Cross nurse's uniform and patch (312736).
 Meyers, Mrs. Lorraine T. (*see* Cartwright, Charles Copp).
 Miles, Mrs. Alice M.: 2 veterinary syringes (315422); 1 commemorative medal (315423).
 Miller, Mrs. Caroline Benes: Fez with tassel, 1893 (309004).
 Miller, Mrs. Clifton M.: Chinese porcelain teapot, tea bowl and saucer, circa 1790-1815 (315129).
 Millett, Stephen C. (through Dr. Herbert B. Weissberger): 2 French fowling firearms (306408).
 Misrach, Richard: 3 silver prints (314536).
 Mitchell, Milton: 1 pane of commemorative stamps, 1946 (312719).
 Moebis, T. T.: reproduction of Civil War song sheet (313936).
 Monte-Sano, Vincent: woman's suit, 1947 (311818).
 Moody, John Southworth: land document, 1677 (314156).
 Moore, Earl: official Post Office envelope, 1883; Post Office form, 1858 (314613); receipt for subscription to counterfeit detector, 1842 (315109).
 Moore, Mrs. Julia Nylund: woman's dress, man's jacket (312207).
 Morey, Jane Bell: Fortuny hanging, pillow cover, and fibreglas textile sample (312070).
 Morgan, Mrs. Barbara: photograph, 1942 (314539).
 Morris, Mark: 50 political items relating to the pacifist movement (314626).
 Morris, Martha: photolithographic reproduction of a painting by Miro (313249).
 Morris, Mrs. Vincent E.: 26 items of women's apparel (309971).
 Morse, Ben L. (*see* French, G. D.).
 Moulton, Mrs. Stanley J.: ice cream dipper (311420).
 Mroczkowski, Dennis P.: Marine utility cap (315362).
 Mulford, Valerie L.: 5 ski clothing items (309460).
 Mulquin, Mrs. David J.: beach pajamas, 1931 (309684).
 Mummert, Harold B.: radio receiver, circa 1934 (312599).
 Murphy, Evelyn: man's tie, woman's shoes (312889).
 Murray, Mrs. John H.: stoneware crock (313266); 2 Franklin D. Roosevelt posters (314097); 8 textile specimens, 1 knitting stick (315253).
 Mustapha, Jennie: coffee mill (312105).
 Myers, Dr. Leslie W. (through Mrs. Leslie Myers): 67 spectacles, cases, and lorgnettes (309904).
 Myers, Mrs. Leslie (*see* Myers, Dr. Leslie W.).
 Myers, Robert G.: Air Force identification tags (314558).
 Nagy, Mrs. Anne: 9 costume and accessory items (309969).
 Neilson, Benjamin R. (*see* Rush, Benjamin).

Neinken, Edward: 62 ancient Greek coins (315302).

Neinken, Mortimer L.: 1 silver sixpence, 1652 (314073); Ordinance establishing the U.S. Mint, 1786 (315110); U.S. cover with 3 stamps, 1861 (315252); and Anna: 12 commemorative medals (314078).

Newbould, Richard J.: prototype and model of indexer (315300).

Nicholas, Robert: collection of World War I objects and documents (313450).

Nichols, Kenneth W.: 12 North Vietnamese paper currencies (314571).

Nicholson, Mary C.: man's suit, 1939 (308022).

Nicolaides, Mrs. Martha Jane: calling card and handkerchief, 1904 (311421).

Niesse, Mrs. Joseph H.: woman's suit, hat, blouse, and pin, 1940s (310518).

Niles, Mrs. Maxine: eyeglasses, circa 1935 (310153).

Norris, Mrs. Marion: wedding dress, slip, shoes, 1936 (309688).

O'Bert, Wendy C.: 40 insignia, medals and uniform items, in memory of Lt. Col. and Mrs. John J. O'Bert (315407).

Oldenburg, John: 9 photographs of carrousels (313810).

Oliver, Mrs. Dorothy L.: English plate, 19th-century (314096).

Orum, Mrs. Carolynn Nuessle: girl's coat and hat, 1932 (309676).

Osborn, Orin O.: watch, shotgun, shell belt, and 21 shells (311476).

Owen, David G.: Monroe calculator (311324).

Packer, Mrs. Dorothy: woman's dress, 1929 (309685).

Panciera, Mrs. Luigia (through Mrs. June Huggins): 19 doilies (313706).

Pangborn, Mr. and Mrs. John: woman's hat, 3 pairs of shoes, dress, and coat, 1940s (309929).

Patrick, Mrs. Angela L.: 7 costume accessory items (309970).

Patterson, Mrs. Jefferson: Senate pass, Congress pass, 2 Inauguration tickets (312086).

Patton, Mrs. Frederic K.: carbide lamp, circa 1914 (315450).

Patton, Joan and Fred: dash board pump, circa 1910; automobile spotlight, circa 1925 (315371).

Patton, Maj. Gen. George S.: herringbone twill suit worn by George S. Patton, Jr., while commanding in Tunisia and Sicily, 1943 (315337).

Peerless, Dr. Sidney A.: 81 antislavery tokens and medals (315111).

Pell, Robert: silk gown worn by Mrs. Grover Cleveland, photograph of gown (312623).

Perkins, H. Porter: 2 World War II scrap books (314315); 9 naval history items (315332).

Peterson, Mendel L.: 14 patent medicines in original containers (304624); 1 cover mailed from Germany to Chicago, 1861 (315124).

Peterson, Mrs. Richard N.: 3 clarinets with cases, photographs and clippings relating to John P. Sousa (314090).

Peyton, Michael: short-wave radio, circa 1941 (312353).

Pfeiffer, Earl C. (*see* Tinsley, Harry J.).

Plummer, Edna: baby shoes (313212).

Poggioli, David Sidney Fisher and Peter Ralph (through Mrs. Mary Fisher Poggioli): Italian Army service uniform, United Nations sash and beret, in memory of Raffaele Peter Poggioli (312597).

Poggioli, Mrs. Mary Fisher (*see* Poggioli, David Sidney Fisher and Peter Ralph).

Pope, Lemuel: porringer, creampot, tea caddy, tea pot stand, snuff box, 2 samplers, and jelly mold, 18th-19th century (313983).

Porter, Mrs. Henry: French shelf clock (315298).

Post, Mrs. Marjorie Merriweather: Marie Louise diadem, 1810 (294384).

Poulton, Mrs. Frank W.: racing ice skates (313652).

Powell, Mr. and Mrs. Larry D.: girl's midi outfit, 1914-1915 (310124).

Price, Mary: woman's suit, dress, 1900-1910 (313233).

Price, Mr. and Mrs. Wiley R., Jr.: water wings, 1937 (309455).

Prilik, Max R.: German coherer, circa 1904 (312937).

- Pritchard, John S., Jr.: Commission in the Georgia Militia, 1880 (314527).
 Pugsley, Edwin A.: Orrery mechanism (312089).
 Ramstedt, C. F.: 15 Naval night vision instruments and accessories, World War II (311714).
 Reed, Mrs. Cloyce Cooley Campbell (*see* Campbell, Edwin Cooley).
 Rehwinkel, Mrs. Myrtle: 2 women's swim suits (309931).
 Revson, Mrs. Lyn: 33 ceramic cottages (315130).
 Ridenour, Frank: 13-star flag (314082).
 Ring, Bernard: 3 commemorative First-Day covers (312729).
 Ripley, Dr. S. Dillon: 3 postage stamps, India (312068); 1 bronze commemorative medal (314575).
 Risley, Vincent: women's knickers and socks, 1920s, man's suit, 1930s (309085).
 Ritter, Mrs. William E.: American Legion uniform and convention medal (311927).
 Robertson, Mrs. Anabel Graves, and Wiggins, Mrs. Isabel Graves: 1 kyat banknote, Bank of Burma (310992).
 Robertson, Paul: fragmented 12-pounder shot (311478).
 Robinson, Edwin K.: fashion print, 1832 (314464).
 Robnett, Mrs. Annette N.: Plako zipper, 1913, and pattern (313217).
 Roe, Jerry D.: political commemorative medallion (315266).
 Rogers, Larry (*see* Cooke, Mrs. Ethel M.).
 Rosenthal, Mr. and Mrs. J. W.: woman's shoes and purse, man's suit, 1960s (313226).
 Rothschild, Sigmund (*see* Wiesenberger, Arthur).
 Runion, Mrs. Donald F.: mink scarf, 1949 (309076).
 Rush, Benjamin, Estate of (through Benjamin R. Neilson): silver tray presented to Dr. Rush for his services during the Philadelphia calamity of 1793 (315342, bequest).
 Ruthizer, Walter: men's vest, Bermuda shorts, 2 shirts, 4 pairs socks (309086).
 Rutledge, Mrs. Anna Wells: Mexican blanket (314656).
 Ryan, Dr. and Mrs. Cornelius: man's Bermuda shorts, 1958 (309082).
 Sachs, Mrs. George H.: 9 costume and accessory items (309766).
 Saffo, Mrs. Jean W.: 12 costume and accessory items (309946).
 Salm, Arthur: 80 postal history items (315703).
 Sampson, Squire: 4 anti-Roosevelt political items (314625).
 Sands, John: orrery, 19th-century (315268).
 Santaballe, Jose R.: gold watch (312742).
 Saumenig, Mrs. Kathrynne Watson: woman's dress and beaver muff, 1952 (311812).
 Saunders, O. George: hat and 7 buttons, Spanish War Veterans (313915).
 Saunders, Rev. Winston A. (*see* Goodrow, Mrs. Doris).
 Sawyer, Dr. William: drawing by Eleanor Dickinson (312497).
 Scheele, Carl H.: phonograph record jacket, 1912-1916 (315317).
 Schlotzhauer, Elbert O.: 2 Burroughs adding machines (312145).
 Schoen, Belle: 9 women's hats, purse, men's knickers (309141).
 Schrack, Mrs. Sylvia: winter service uniform and helmet, World War I (309344).
 Sedon, Nancy Lucking: embroidered counterpane (315442).
 Sethian, Mrs. Marie: woman's suit and coat (309682).
 Shapero, Mate S.: 623 lottery tickets and premium bonds (315114).
 Shaskan, Sidney A.: 1 badge, 34 buttons, World War I (314650).
 Sheard, Alvin J.: train order hoop, circa 1892 (315388).
 Sheeley, Earl: football helmet, 1916 (310958).
 Shelley, Mrs. Mary Ford: woman's coat, shoes, 2 purses, 4 hats (310283).
 Sheridan, Philip H.: 8 coins, Great Britain, 5 U.S. medals, 1 storecard, in memory of Vincent F. Hartman (314080).

Shipp, Mrs. Winifred Dillion (*see* Dillion, Dorothy Vernon).

Shoenfeld, Mrs. Rose E.: wedding gown and veil, 1941 (310532).

Shor, Mr. and Mrs. George G., Jr.: 12 political history items (312084).

Shores, Mrs. Lois N.: 40 doll's glassware and tea set pieces (307203).

Silvey, Ted F.: Underwood typewriter (315434).

Simyer, Mrs. Natila: woman's swim suit, 1941 (308602).

Skinner, Virginia S.: flax brake (315392).

Slonevsky, Leonard: 4 bound booklets, box cover (311321).

Smith, Mrs. Mae Elizabeth: woman's sweater, girdle (309907).

Snyder, Gloria P.: woman's sweater, blouse, 2 skirts, 4 coats (309737).

Solomon, Edward C.: man's shirt and tie (313229).

Sommermeier, Karl M.: 4 men's ties (313305).

Spalding, Philip Gould: 37 foreign coins (305875).

Sparrow, Dr. Frederick K.: 25 hand painted porcelain pieces, 19th–20th century (314093).

Spengler, William F.: 22 coins and banknotes (313700).

Stack, Norman: 93 British tokens, 19th-century (312052).

Stackhouse, William III: monkey wrench, screwdriver (315315); 12 wood working tools (315457).

Staley, J. W.: original film on the raising of a Continental gunboat (311393).

Staley, Mrs. P. C.: cookbook, 1857 (312148).

Starr, Neal L.: battle painting (311390).

Stein, Murray: 4 computer components (308972).

Steinbeck, Mrs. I. B.: school prize medal, fraternity key (315249).

Steinhauer, Mrs. Carl W.: bread slicing machine and documents (315261).

Stelzer, Mrs. Agnes: woman's suit, 2 dresses (313018).

Stern, Mrs. Edith M.: pottery plate (312078).

Stevenson, Mrs. David: reed organ, 1861 (315255).

Stone, Mr. and Mrs. Gerald E.: woman's skirt, man's socks (309679).

Strauss, Mrs. Babette R.: woman's dress (310012).

Strauss, Adm. Lewis, Estate of (through Lewis H. Strauss): pocket watch (312741).

Strauss, Lewis H.: block of graphite containing 2 fuel elements (310941); fuel element prototype (311885) (*see also* Strauss, Adm. Lewis).

Sullivan, Mrs. Catherine D.: woman's suit, 1956 (310016).

Sutherland, Mrs. William A.: porcelain figure, circa 1760 (315260).

Sutton, Elsie B.: wedding dress, 1820 (310015).

Swanner, John M.: metal shield (314101).

Swearingen, Brenton: grass trimmer (315427).

Symonds, Mr. and Mrs. Richard C.: rural mail box (314631).

Syz, Dr. Hans: 11 Meissen porcelain pieces, 18th-century (315259).

Taff, D. S.: child's table knife (310555).

Tall, Joel: tape splicer (312352).

Tarbet, Mrs. Jan F.: woman's suit and blouse, 1955 (309905).

Taylor, Frank A.: Bicentennial medallion (313372).

Terwilliger, Mr. and Mrs. H. Graves: pair of porcelain figures, 19th-century; Meissen teapot and lid, circa 1730 (314092).

Thode, Mr. and Mrs. Robert D.: man's suit, wallet, key case, shoes, suspenders, 4 ties (313481).

Thomas, Jesse B. (*see* Geohegan, William E.).

Thomas, John Carl: inkwell (313925).

Thomsen, Mrs. Hugo: 6 graphic art tools (310477).

Tice, Mrs. John G.: woman's swim suit, 1930s (310013).

Tinsley, Harry J., Estate of (through Earl C. Pfeiffer): mariner's compass, 19th-century (291268).

Torkelson, Mr. and Mrs. E. C.: man's hat, woman's brooch, bracelet and earrings (310123).

- Trobaugh, Kenneth: 158 Civil War medals, tokens, and storecards (312065, 313701).
- Truax, Robert: street car controller (315304).
- Tweedy, Mrs. Marjorie Alice Loud: leather sewing kit (310983).
- Tyler, Robert O. (*see* Watt, John, Jr.).
- Unknown: 8-day watch (300826).
- Valenta, Mr. and Mrs. Ronald (through Herbert Foley Jr.): letter from Herbert Hoover, letter from Upton Sinclair (315267).
- Van Buskirk, James (*see* Kissinger, John R.).
- Van Deusen, John: pin box (314633).
- Vanembrugh, William C.: man's suit, 1941 (313306).
- Villastrigo, Edith: 7 anti-war posters, pennant, and ribbon (314623).
- Vinson, Mrs. Lucy M.: woman's suit, halter, slip, gloves, purse, necklace, and bracelet (309723).
- Vogel, Robert M.: railroad safety stove patent model (315446).
- Vosepka, Mrs. R. E., Jr.: woman's dress and jacket, 1947 (309456).
- Vosloh, Lynn W.: 1 medal, 9 colonial and ancient coins (314564); 17 ancient Roman coins (314567); 7 German family tokens (314570).
- Waibel, Mr. and Mrs. Philip G.: girl's dress, 1958 (309680).
- Waite, Mrs. Barbara (*see* Bradshaw, Lilyan B.).
- Wallis, Mrs. J. L.: 4-piece trousseau set, 1925 (308575).
- Warshaw, Mr. and Mrs. Harry: 25 pieces of coin glass, 2 commemorative glass plates (314661); 8 pieces of coin glass (315108).
- Waterman, Dr. Glen S. (*see* Andrews, Mrs. M. T., Jr.).
- Watkins, C. Malcolm: pottery vase, 1896-1908 (312734).
- Watkins, E. K.: card to a reception for General U. S. Grant, 1879 (312085).
- Watkins, Mrs. Joan Pearson: 19 women's costume and accessory items (310127).
- Watkins, Mrs. Ruth H.: 14 Philadelphia Centennial items (308305).
- Watt, Gus H. (*see* Watt, John Jr.).
- Watt, John, Jr., Estate of (through Robert O. Tyler and Gus H. Watt): 2 ballroom chairs (315256, bequest).
- Watts, Lt. Col. James L.: rural mail box (314617).
- Weaver, Harry F.: cigarette lighter with profile of John L. Lewis (315452).
- Weinberg, Hanns: 3 porcelain pieces, circa 1755 (314660).
- Weissberger, Dr. Herbert B. (*see* Millett, Stephen C.).
- Welch, Mrs. Yvonne M.: woman's boots, 1931 (312885).
- Wells, David L.: man's suit, shirt, tie, 1940 (313479).
- Wendt, Alma B.: 2 women's suits (309932).
- Whitcomb, Alan J.: original radio message sent from CINOPAC to Naval Intelligence in Washington at the time of the attack on Pearl Harbor (311945).
- Whittemore, Mr. and Mrs. Howard E.: spinning wheel, reel, embroidered pillow cover (314085).
- Wickenheiser, Mr. and Mrs. H. E.: 22 clothing accessory items, 48 fashion textile sketches, 1932 (310036).
- Wiesenberger, Arthur (through Sigmund Rothschild): 12,236 paper currencies of the German concentration camp in Theresienstadt, World War II (315122).
- Wiggins, Mrs. Isabel Graves (*see* Robertson, Mrs. Anabel Graves).
- Wigutoff, Mrs. Bessie R.: 6 table covers, pillow cases, sachet case, and pin cushion (315254).
- Wilbur, Mr. and Mrs. R. Lloyd: man's suit, shirt, woman's dress (309404).
- Williams, David: 100 cable samples (313046).
- Willis, Mrs. Minna: 13 women's costume and accessory items (309403).
- Willson, Kenneth A.: Japanese Army uniform (314597).
- Wilson, Rowland S.: 737 coins, tokens, and paper currencies (312033, 312055).

Wilson, Mrs. Stephen B.: 4 pairs women's shoes (310126).
 Winans, Edwin O.: woman's magazine, 1906 (313424).
 Wise, Alice A.: military induction order, 1918 (308902).
 Wolff, Donald E.: Model A Ford, 1931 (315444).
 Woodward, Mrs. Dorothy: shoes, 1958 (313223).
 Woodward, Mrs. Stanley: Army dress uniform cape (308570).
 Woolmington, Mrs. Ruth W.: taffeta dress fabric (314086).
 Workinger, Mrs. Hilda M.: electric toaster (311318).
 Wright, Mrs. Janice G.: Confederate States overcoat (310956).
 Wulfsberg, Einar T.: service hat, pre-World War II (314466).
 Wynyard, Martin and Ruth: 14 porcelain pieces (314662).
 Yerger, Mrs. Merten: woman's gloves, purse (311816).
 Young, John T., Jr.: men's shoes, 1925 (312888).
 Zierdt, Dr. Charles H.: cast iron microtome, in memory of Dr. Charles H. Zierdt (308059).
 Zorach, Tessim: hooked rug, 19th-century (312423).
 Zwibel, Burton C.: 21 German Nazi edged weapons and accessories (309977).

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INSTITUTIONAL

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 Aitutaki Post Office, Cook Islands: 19 mint and used postage stamps (313378).
 American Negro Commemorative Society: 10 silver commemorative medals (315121).
 American Physical Therapy Association (through Royce P. Noland): 1 Reconstruction Aide cape (312935).
 Asesora Tecnica Filatelica, Colombia (through Mrs. Beatriz Pantoja de Gil): 7 First-Day covers (312730).
 Atchison, Topeka and Santa Fe Railway Co. (through Bill Burk): 17 railroad track tools and equipment (315262).
 Ayer Abh International, N. W. (through Robert C. Bach): 400,000 advertising page proofs (314679).
 Barnes Co., W. F. and John: table saw, 2 jig saws (315436).
 Barra Foundation, Inc. (through Robert L. McNeil, Jr.): page of speech, by Theodore Roosevelt, with bullet hole in it; page struck by bullet while in his vest pocket (312087).
 Bell Telephone of Pennsylvania (through R. H. Haase): telephone switching unit and test wagon (312603).
 Beloit College (through Robert O. Garrett): 7 physical science items (312090).
 Bhutan Stamp Agency, Ltd., Bahamas: 24 mint postage stamp (312728).
 Britannia Commemorative Society, Ltd., Great Britain: 4 silver commemorative medals (315323).
 Bronx Community College (through Andrew Ciofalo): fluoroscope, transit, Y-level (314672).
 Burundi Philatelic Agency: 23 mint and used postage stamps (312727).
 California, University of: *Lawrence Hall of Science* (through Laurie Eason): control console, beam deflector, ion source, 2 electron source probes, 35 ion source cones (313045).
 Carlisle Colonial Minute Men, Inc. (through Robert R. Heath): 2 commemorative medals (313343).
 China Directorate General of Posts, Taiwan (through S. P. Wang): 12 mint postage stamps (312725).
 Chocolate Information Council (through Richard T. O'Connell): 63 item chocolate exhibit (315132).

- Cigar Makers International Union of America (through Mrs. Mildred Dehn Yerkes): adding machine and instruction booklet (313270).
- City Stores Co. (through Louis G. Melchior): 8 mathematical items (314157).
- Citizens National Bank (through John P. Hines): hand-painted Bicentennial commemorative plate (312077).
- Columbia University: 4 meters, spectroscope, heliostat (315390).
- Commerce, U.S. Department of: *Maritime Administration* (through T. J. Patterson, Jr.): 6 pieces of china from the SS *Jeremiah O'Brien* (315428).
- Congressional Quarterly, Inc. (through John O'Hearn): paper cutter, 19th-century (310999).
- Cook Islands Philatelic Bureau: 20 mint and used postage stamps, 4 mint souvenir sheets, 2 First-Day covers (312717).
- Cordis Co. (through John Sheeham): 2 bloodline sets, 2 epicardial leads, 2 artificial kidneys, 1 Omni-Stanicon pacer (306393).
- Crossley-Premier Engines Limited, Great Britain: gas engine, 1887 (314636).
- Danbury Mint (through W. J. Strausser): 2 commemorative medals (314568).
- Defense, U.S. Department of: revolving machine gun (310072); 2 combat field packs (311319). *Department of the Air Force*: 2 academy swords with scabbards and cases (313185). *Department of the Navy*: shelter half tent (314595); (through Rear Adm. E. J. Fahy): 40-foot hydrofoil (314002).
- Denmark Ministry of Public Works (through T. W. Madsen): 40 mint postage stamps (310520).
- District of Columbia Inaugural Committee (through Thornell E. Page): 6 Inauguration items, 1975 (315314).
- D. C. Transit, Inc. (through O. Roy Chalk): electric street car, 1898, trailer, 1892, locomotive, 1876 (252681).
- Dubai General Post Office: 3 mint postage stamps (312714).
- Eleutherian Mills-Hagley Foundation (through Dr. Walter J. Heacock): ship model *Patrick Henry* (315377).
- Exxon Corporation (through Jack P. Shannon): ship model SS MANHATTAN (315440).
- First Pennsylvania Bank (through Edward R. Manley): pair of bank doors, transom and frame, teller gate (314655).
- Fitchburg State College (through J. E. Carpenter): Blaisdell planer, circa 1870 (312740).
- Franklin Mint: 34 silver commemorative medals (314079, 314081); (through William F. Krieg): silver commemorative medal (313373).
- Galaxy Medals (through Richard J. Summer): bronze commemorative medal (314566).
- Howard University (through Dr. Owen D. Nichols): Bachelor of Arts Hood (315326).
- Illinois, University of (through Ralph Simmons): 11 early physics apparatus (312091).
- Information Agency, U.S. (through George Jacob): multiband portable receiver, circa 1962 (312468).
- Interior, U.S. Department of the: *National Park Service*: 2 textile furniture covers (315431); (through David H. Wallace): 1 gasoline engine (315325).
- International Fraternal Commemorative Society: 7 silver commemorative medals (315301).
- International Harvester Corp. (through John Dierbeck): toy tractor (315425).
- International Nickel Co., Inc. (through C. R. Cupp): electron probe micro-analyzer (312204).
- Israel Ministry of Posts: 8 First-Day covers (312726).
- Jantzen, Inc. (through Donald L. Smith): woman's swim suit, circa 1920, man's swim suit, circa 1920 (307627).
- Jonathan Logan, Inc. (through Bernard Wult): 2 women's dresses, 1974 (310306).

Judaic Heritage Society (through Fred Bertram) 24 silver commemorative medals (314573).

Justice, U.S. Department of: *U. S. Marshal's Office*: 5 firearms (306396, 311473).

Kalamazoo Public Museum (through Alexis A. Praus): 120 post cards (312718).

Keuffel & Esser Co. (through Marsh W. Bull): 7 items of surveying equipment (306012).

Knights Templar of the U.S.A. (through Paul C. Rodenhauser): 14 conclave badges (313374).

Krasney Associates (through Samuel Krasney): 2 gold stamps (315251).

Lanello Reserves, Inc. (through Randall King) and Silver Creations, Ltd. (through Richard M. Moskow): Atlantic cable sample, 1858 (312154).

Lenox, Inc. (through Robert J. Sullivan): 2 plates, 1974 (315131).

Library of Congress: 6 early 19th-century scripts (313348); (through Nathan R. Einhorn): 62 coins, paper monies, medals, and related materials (313177).

Masury Paint Co. (through George J. Wise): 3 cans of paint, 1875–1930 (315439).

McDowell-Wellman Engineering Co. (through A. J. Lichtinger): model of Hulett unloader (315263).

Monaco Office des Emissions de Timbres-Poste (through H. Chiavassa): 14 mint postage stamps, 4 mint souvenir sheets (312715).

Montgomery Ward (through Frederic Giersch): woman's coat, 1940–1948 (309683).

Museum of Science and Industry (through Daniel M. MacMaster): 2 surveyor's compasses, pyrometer (271855).

National Aeronautics and Space administration: *Goddard Space Flight Center*: 1 atomic clock (315432). *Lewis Research Center* (through James J. Modarelli): 1 thermionic converter (312449).

National Coal Association (through Ralph B. Harry): folding machine (315437).

National Commemorative Society: 41 silver commemorative medals (315322).

National Grain and Feed Association (through Raymond Bohnsack): 24 grain specimens (315429).

New York State Department of Transportation (through W. C. Burnett): upper-chord section from bow-string truss bridge, circa 1876 (315387).

New Zealand Post Office Philatelic Bureau: 8 mint postage stamps (312722).

Norwegian Embassy (through K. Nergaard): 2 First-Day covers, 1 post card, 4 mint postage stamps (311384).

Pittsburgh, University of (through John M. Nutt): 9 civil engineering tools (315134).

Presidential Art Medals, Inc. (through R. James Harper): 20 commemorative medals (315248).

Prince Georges County Circuit Court, Maryland (through Charles E. Callow and George B. Gifford): Circuit Court seal, 1907–1974 (312738).

Professional Insurers and Associates, Inc. (through Vergil M. Agostinelli): 1 SCM typetronic, 1 papertape automated data typing system with manuals and handbook (313918).

Reliance Graphics (through William D. Robertson), Sorg Printing Co., and Strathmore Co.: 19 wood type fonts, in the name of Printing Industries of America (313511).

Schmidt International, Inc., Oscar: ukelin with bow (312073).

Silver Creations, Ltd. (*see* Lanello Reserves, Inc.).

Singer Co.: 7 Friden calculators (313935).

Society of Medalists (through Mrs. Mary Louisa Cram): 3 bronze commemorative medals (315324).

Sony Corp. (through Akio Morita): 3 desk calculators and related materials (313986); 12 electrical artifacts (314670).

Sorg Printing Co. (*see* Reliance Graphics).

- Sperman Metal Specialties (through Jacob H. Sperman): 2 linear air bearings and connectors (315441).
- Sperry-Univac (through A. E. Adams): 4 reports on computer systems (312206). Stack's: 602 ancient coins (312047, 312056, 315395, 315396, 315397, 315398, 315403, 315404); 767 commemorative medals (312035, 312042, 312045, 312050, 313345, 313346, 313347, 313352, 313369); 510 badges and medals (312034, 312038, 312040, 312046, 312054); 170 tokens, medals, storecards, and gamecounters (312051, 312053, 315386); 29 ancient, medieval, and modern coins (312057); 136 foreign medals and plaques (312059); 115 foreign coins and tokens (312041); 58 depression scrip and clearing-house certificates (312036); 9 historical materials concerning the history of banking (313370); 6 emergency banknotes (315104); 1 Bank of the United States check, 1819 (315376).
- State, U.S. Department of: *Office of the Chief of Protocol*: 35 foreign decorations (306173); (through Jane A. Guilbault): 7 State Gifts to the Vice President of the United States (314032). *Office of Philippine Affairs*: seal and flag of the High Commissioner with staff and picture (314561).
- Strathmore Co. (see Reliance Graphics).
- Sweden Postens Filateliavdelning: 12 First-Day covers, 15 mint postage stamps, 10 booklets of postage stamps (311045).
- Texaco, Inc. (through E. W. McNealy): RW-300 computer console and components (312146).
- Thunder Bridge Colonial Muster (through Robert R. Health): 6 commemorative medals (313353, 314070).
- Treasury, U. S. Department of the: *Alcohol, Tobacco and Firearms Bureau*: 39 firearms and accessories (306420, 311474, 311477). *Bureau of Customs*: 2 submachine guns, assorted parts, and accessories (306418). *Bureau of Engraving and Printing* (through James A. Conlon): 571 plate proof sheets of U.S. postage stamps (312723). *Internal Revenue Service*: 1 semi-automatic pistol (306249).
- United Federation of Postal Clerks (through William E. Price and John F. McClelland): Post Office vehicle, 1941 (315456).
- United Nations Postal Administration (through Ole Hamann): 350 mint postage stamps (312724).
- Warner & Swasey Co. (through C. T. Blake): dividing engine, circa 1895, related materials, box of parts (313774).
- Waterbury Companies, Inc.: 10,000 military insignia, belt plates, civilian buckles, jewelry, and metal stampings (314686); (through L. P. Sperry): 2 eagle ornament dies (314649).
- White Stag (through Joan Christensen): 2 women's tennis dresses, tennis sweater (310307).

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A tremendous debt of gratitude is owed the many individuals named in the following lists who served the Smithsonian Institution so faithfully this past year. Their duties were many and varied and their able performance greatly aided the Institution in carrying out its mandate.

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It is particularly significant that the contributions of Moonwatch Volunteers be acknowledged in this annual report as the program officially terminated on June 30, 1975.

Conceived and implemented in 1956 by the distinguished scientist, Dr. Fred L. Whipple, Moonwatch was the first fully operational satellite tracking network. Accomplished through the efforts of hundreds of Volunteers around the globe (some of whom have participated for eighteen years), the establishment and success of this program is unparalleled. Data compiled has been used regularly in the Smithsonian and international research programs, affording science a better understanding of the upper atmosphere and the Earth's gravitational field.

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* See also under National Collection of Fine Arts/National Portrait Gallery Library, page 581.

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APPENDIX 15. *Visitors to the Smithsonian Institution in Fiscal Year 1975*

Month	Smithsonian Institution Building	Arts & Industries Building	Natural History Building	Air & Space Building	Freer Gallery of Art	History & Technology Building
July	107,087	310,913	313,323	164,510	22,412	740,772
August	121,817	320,692	340,756	198,317	24,625	800,591
September	55,465	135,892	144,862	77,655	12,989	355,340
October	57,707	138,523	181,790	103,958	14,475	404,696
November	59,259	128,115	227,353	100,172	13,496	439,278
December	50,225	80,589	158,576	61,889	11,568	286,467
January	38,207	72,065	148,960	72,385	13,088	259,152
February	44,650	83,088	197,192	62,029	12,508	319,187
March	90,624	162,371	361,595	117,445	23,628	645,173
April	124,609	186,505	559,454	159,122	22,292	963,521
May	98,930	167,854	534,700	139,354	21,833	1,001,877
June	118,584	186,749	500,026	159,596	22,147	895,000
TOTALS	967,164	1,973,356	3,668,587	1,416,432	215,061	7,111,054

	Fine Arts & Portrait Galleries	Renwick Gallery	Hirshhorn Museum ¹	Anacostia Neighborhood Museum	Totals
July	30,697	12,920		3,654	1,706,288
August	34,383	16,031		2,665	1,859,877
September	25,560	10,572		2,513	820,848
October	30,403	14,203	279,716	2,711	1,228,182
November	31,991	14,316	212,360	1,638	1,227,978
December	23,561	12,509	149,961	5,708	841,053
January	28,227	14,285	179,866	2,359	828,594
February	23,352	18,772	122,302	6,402	889,482
March	26,658	13,399	208,482	4,783	1,654,158
April	31,328	14,846	178,387	6,822	2,246,886
May	42,518	12,338	151,279	2,606	2,173,289
June	40,270	11,242	138,187	1,049	2,072,850
TOTALS	368,948	165,433	1,620,540	42,910	17,549,485

¹ Hirshhorn Museum and Sculpture Garden opened October 1974.

NOTE: Visitors to the National Zoological Park (not reflected in the above figures) are estimated at 2½ million for fiscal year 1975. A survey is currently underway at the Zoo to develop a more accurate method of determining attendance figures.

