REPORT OF THE SECRETARY OF THE SMITHSONIAN INSTITUTION

AND

FINANCIAL REPORT OF THE EXECUTIVE COMMITTEE OF THE BOARD OF REGENTS

1949

SMITHSONIAN INSTITUTION
WASHINGTON, D. C.

REPORT OF THE SECRETARY OF THE SMITHSONIAN INSTITUTION

AND

FINANCIAL REPORT OF THE EXECUTIVE COMMITTEE OF THE BOARD OF REGENTS

FOR THE

YEAR ENDED JUNE 30

1949

(Publication 3992)

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1950

For sale by the Superintendent of Documents, U. S. Government Printing Office
Washington 25, D. C. - Price 45 cents

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June 30, 1949

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Collaborator in anthropology; W. W. Taylor, Jr.

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Division of Reptiles and Amphibians: Doris M. Cochran, associate curator.

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Section of Marine Transportation: Frank A. Taylor, in charge.

Section of Electricity: K. M. Perry, associate curator.

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CANAL ZONE BIOLOGICAL AREA

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REPORT OF THE SECRETARY OF THE SMITHSONIAN INSTITUTION

ALEXANDER WETMORE

FOR THE YEAR ENDED JUNE 30, 1949

To the Board of Regents of the Smithsonian Institution:

GENTLEMEN: I have the honor to submit herewith my report showing the activities and condition of the Smithsonian Institution and its bureaus during the fiscal year ended June 30, 1949.

GENERAL STATEMENT

The Institution continued vigorously to pursue its program of activities in "the increase and diffusion of knowledge" as stipulated by its founder, James Smithson. The increase of knowledge is fostered by original scientific researches and explorations in the fields of anthropology, biology, geology, and astrophysics; the diffusion of knowledge, by publications in a number of series that are distributed free to libraries and educational institutions throughout the world, by extensive museum and art gallery exhibits, by the International Exchange Service for the world-wide interchange of scientific and governmental publications, and by a large correspondence, both national and international.

I present first certain general features of the year's activities, together with a summary of the work of the several bureaus of the Institution, to afford a concise picture of the events of the year. Next follow appendixes containing more detailed reports on each bureau, and finally there appears the financial statement of the Executive Committee of the Board of Regents. The appendixes contain reports on the United States National Museum, the National Gallery of Art, the National Collection of Fine Arts, the Freer Gallery of Art, the Bureau of American Ethnology, the International Exchange Service, the National Zoological Park, the Astrophysical Observatory, the National Air Museum, the Canal Zone Biological Area, the Smithsonian library, and the publications of the Institution.

When the Smithsonian Institution began its operations more than one hundred years ago, it carried on its research programs largely by subsidizing the work of scientists not on its own staff, and by publishing the results of their work. As these pioneer researches expanded in scope and became somewhat stabilized, bureaus gradually grew up around the Institution, each with its own staff specializing in the work of that particular field. The value of the various activities gradually became known to the Nation, and eventually one by one they were recognized as public necessities by the Congress. Most of them are now supported largely by Government funds although remaining under Smithsonian direction. At present, nearly all the research and exploration of the Institution is done through these bureaus, notably the United States National Museum, the Bureau of American Ethnology, and the Astrophysical Observatory.

As stated in last year's report, the Institution has for many years operated under the handicap of shortages of personnel and of adequate housing space. I reported that the Smithsonian Institution has today the same amount of space that it had in 1911 in which to accommodate four times as many visitors and four times as many museum specimens. Much the same condition still prevails. Some slight gain was apparent in personnel in a few of the scientific divisions, but not sufficient for the prompt execution of essential curatorial work and adequate research on the National collections. The crowded condition, particularly in the buildings of the National Museum, remained unalleviated. In the report of the Director of the Museum it will be noted that there is a considerable decrease in number of specimens accessioned during the year, a decrease which, he says, "may be attributed in part to the inadequacy of available storage facilities for the preservation of such materials." More adequate building space is one of our major needs.

Though hampered by space conditions it should be brought to attention that the Smithsonian Institution continues to grow and to expand its usefulness year by year. In the 5 years during which I have served as Secretary, three additional activities have been added to its responsibilities—the Canal Zone Biological Area, the National Air Museum, and the River Basin Surveys, the latter a unit of the Bureau of American Ethnology. The work of these new activities has notably augmented Smithsonian efforts toward the increase and diffusion of knowledge in widely diversified fields, as will be seen in reading the detailed reports appended hereto. The purpose in calling attention to deficiencies is to emphasize the obvious fact that a growing

institution such as the Smithsonian, of so vital interest and importance to the American people, must receive increased financial support if it is to continue to meet its full obligations and to further the high ideals of its founder, James Smithson, who left his entire fortune in trust to the United States of America for the benefit of all mankind.

PRESENTATION OF THE WRIGHT BROTHERS' AEROPLANE OF 1903 TO THE UNITED STATES NATIONAL MUSEUM

On December 17, 1948, the forty-fifth anniversary of the first flight by Wilbur and Orville Wright at Kitty Hawk, N. C., the original aeroplane that made that historic flight became the property of the American people. At a formal ceremony in the Museum attended by many high civil and military officials the plane was presented to the United States National Museum by Milton Wright on behalf of the estate of Orville Wright.

The story of the plane goes back to December 17, 1903, when the Wright Brothers were ready after several years of research and experiment to test out their gasoline-engine-powered biplane at Kitty Hawk on the coast of North Carolina. With Orville at the controls, the machine was released, and after a 40-foot run on the launching track, it lifted into the air in full flight. In Orville Wright's own words:

"The flight lasted only 12 seconds, but it was nevertheless the first in the history of the world in which a machine carrying a man had raised itself by its own power into the air in full flight, had sailed forward without reduction of speed, and had finally landed at a point as high as that from which it started."

Three more flights were made the same day, but after the last flight a strong gust of wind turned the plane over, damaging it so badly that no more trials were made that year. The damaged machine and engine were sent back to the Wrights' workshop in Dayton, and 13 years later were restored, using all the original parts available. The aeroplane was displayed at the Massachusetts Institute of Technology and later at several aeronautical exhibitions. In 1928 Orville Wright had it sent as a loan to the Science Museum at South Kensington, London, England, where it remained on exhibition until World War II. Owing to the danger of damage by bombing, the plane was removed to a safe place for the duration of the war.

When Orville Wright died on January 30, 1948, it was learned from papers in his files that he wished the Kitty Hawk aeroplane to be returned to the United States and placed in the National Museum. The executors of his estate conferred with officials of the Science

Museum and of the Smithsonian Institution, and with the generous cooperation of the British Government the actual transfer of the plane took place in November 1948. It was brought across the Atlantic to Halifax on the *Mauretania*, from there to Bayonne, N. J., on the Navy carrier *Palau*, and to Washington by Navy truck.

At the formal presentation on December 17, 1948, the ceremonies were opened by the Secretary of the Smithsonian Institution. After the invocation by Maj. Gen. Luther D. Miller, Chief of Chaplains, Department of the Army, and greetings by the Presiding Officer, Chief Justice Fred M. Vinson, Chancellor of the Smithsonian Institution, a message from the President of the United States was read by Col. Robert B. Landry, Air Force Aide to the President. His Britannic Majesty's Ambassador, Sir Oliver Franks, K. C. B., C. B. E., then spoke on "Britain and the Wright Brothers," after which the presentation of the aeroplane was made by Milton Wright, of Dayton, Ohio, on behalf of the estate of Orville Wright. Mr. Wright told of his boyhood recollections of his uncles' bicycle shop where the Kitty Hawk plane was fabricated, and concluded thus:

"The aeroplane means many things to many people. To some it may be a vehicle for romantic adventure or simply quick transportation. To others it may be a military weapon or a means of relieving suffering. To me it represents the fabric, the glue, the spruce, the sheet metal, and the wire which, put together under commonplace circumstances but with knowledge and skill, gave substance to dreams and fulfillment to hopes."

The aeroplane was accepted on behalf of the Smithsonian Institution by Chief Justice Fred M. Vinson, Chancellor of the Institution, and the address of acceptance was given by Vice President-Elect Alben W. Barkley, a regent of the Institution. In the course of his address Mr. Barkley expressed one thought that doubtless was in the minds of all participants in the ceremony:

"It is a matter of deep regret to all of us that Orville Wright could not have been here today to see this wide public recognition of achievement, and receive in person the fitting acclaim to his brother, to himself, and to their Kitty Hawk plane. We are grateful to all of those who have made it possible to bring the plane back to its native soil, and especially to the heirs of the estate of Orville Wright, for depositing the Kitty Hawk machine here where all America will have an opportunity to see it, and where all may do it fitting honor."

The Kitty Hawk aeroplane now hangs suspended from the ceiling of the north hall of the National Museum's Arts and Industries Building, where the presentation ceremony was held. Directly back of the main entrance, the plane is the first object to meet the eyes of

the thousands of visitors who throng the Museum daily. As thus displayed it bears the following label:

The Original

WRIGHT BROTHERS' AEROPLANE

The world's first
power-driven heavier-than-air machine in which man
made free, controlled, and sustained flight

Invented and built by Wilbur and Orville Wright
Flown by them at Kitty Hawk, North Carolina
December 17, 1903

By original scientific research the Wright Brothers
discovered the principles of human flight

As inventors, builders, and flyers
they further developed the aeroplane, taught man to fly
and opened the era of aviation

Deposited by the Estate of Orville Wright

◇

"The first flight lasted only twelve seconds, a flight very modest compared with that of birds, but it was nevertheless the first in the history of the world in which a machine carrying a man had raised itself by its own power into the air in free flight, had sailed forward on a level course without reduction of speed, and had finally landed without being wrecked. The second and third flights were a little longer, and the fourth lasted 59 seconds covering a distance of 852 feet over the ground against a 20 mile wind."—WILBUR and ORVILLE WRIGHT.

(From Century Magazine, vol. 76, September 1908, p. 649.)

This is not the final resting place of the plane, however—it is destined eventually to occupy the place of honor in the National Air Museum, the most recent bureau of the Smithsonian Institution. Preliminary plans for the Air Museum envision a special centrally located exhibit area for the Wright aeroplane of 1903, to serve as a memorial to the birth of aviation.

THE ESTABLISHMENT

The Smithsonian Institution was created by act of Congress in 1846, according to 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." In receiving the property and accepting the trust, Congress determined that the Federal Government was without authority to administer the trust directly, and, therefore, constituted an "establishment" whose statutory members are "the President, the Vice President, the Chief Justice, and the heads of the executive departments."

THE BOARD OF REGENTS

The following changes occurred during the year in the personnel of the Board of Regents:

On January 20, 1949, Vice President Alben W. Barkley (formerly a regent by appointment from the Senate) became ex officio a member of the Board.

On February 14, 1949, the following regents were appointed from the House of Representatives: Clarence Cannon of Missouri; John M. Vorys of Ohio; and E. E. Cox of Georgia to succeed Samuel K. McConnell of Pennsylvania.

On March 8, 1949, Senators Leverett Saltonstall and Clinton P. Anderson were appointed to succeed Vice President Alben W. Barkley who became an ex officio member of the Board, and Senator Wallace H. White of Maine, retired.

On March 10, 1949, Dr. Jerome C. Hunsaker was appointed a citizen regent from Massachusetts for the statutory term of 6 years, to succeed Frederic C. Walcott, retired.

The roll of regents at the close of the fiscal year, June 30, 1949, was as follows:

Chief Justice Fred M. Vinson, Chancellor; Vice President Alben W. Barkley; members from the Senate: Walter F. George, Clinton P. Anderson, Leverett Saltonstall; members from the House of Representatives: Clarence Cannon, John M. Vorys, E. E. Cox; citizen members: Harvey N. Davis, Arthur H. Compton, Vannevar Bush, Robert V. Fleming, and Jerome C. Hunsaker.

Proceedings.—The Board of Regents held its annual meeting on January 14, 1949. Present: Chief Justice Fred M. Vinson, Chancellor; Representative Clarence Cannon, Representative John M. Vorys, Dr. Arthur H. Compton, Dr. Harvey N. Davis, Dr. Robert V. Fleming, Secretary Alexander Wetmore, and Assistant Secretary John E. Graf.

The Secretary presented his annual report covering the activities of the Institution and its bureaus, including the financial report of the Executive Committee, for the fiscal year ended June 30, 1948, which was accepted by the Board. The usual resolution authorizing the expenditure by the Secretary of the income of the Institution for the fiscal year ending June 30, 1950, was adopted by the Board.

It was announced that in support of the work of the Astrophysical Observatory John A. Roebling had made a further generous gift which is of major importance in carrying on these scientific investigations.

The annual report of the Smithonsian Art Commission was presented by the Secretary and accepted by the Board. A resolution was adopted to reelect the following members for 4-year terms: Archibald

G. Wenley, David E. Finley, Eugene E. Speicher, Paul Manship. The following officers were reelected for the ensuing year: Chairman, Paul Manship; vice chairman, Robert Woods Bliss; secretary, Alexander Wetmore.

The Board was advised that in an attempt to recover the Gellatly art collection from the Secretary in his status of a private individual, though acting as custodian under the Smithsonian Institution, Mrs. Charlayne Gellatly's attorneys had filed action in the District Court of the United States for the District of Columbia on June 18, 1947. Under date of June 17, 1948, Judge J. McGuire rendered a decision that, in the opinion of the Court, there was no merit in Mrs. Gellatly's claims, since it was found that there was a valid gift to the United States by the deceased, John Gellatly, before his death and before his marriage. On July 19, 1948, the attorney for Mrs. Gellatly filed notice of appeal before the United States Court of Appeals for the District of Columbia. Marvin C. Taylor, special attorney, Department of Justice, represented the Institution.

On the evening of March 1, 1949, an informal meeting of the Board was held at dinner in the Main Hall of the Smithsonian Building, with the Chancellor, Chief Justice Fred M. Vinson, presiding. At this meeting heads of the various activities under the Institution presented statements relative to their work. These statements, with the ensuing discussion, provided a general view of the existing operations of the Smithsonian, particularly in the research field.

FINANCES

A statement on finances, dealing particularly with Smithsonian private funds, will be found in the report of the Executive Committee of the Board of Regents, page 173.

APPROPRIATIONS

Funds appropriated to the Institution for the fiscal year ended June 30, 1949, totaled $2,259,000, allotted as follows:

General administration	$46,794
National Museum	712,560
Bureau of American Ethnology	71,996
Astrophysical Observatory	101,590
National Collection of Fine Arts	32,543
International Exchange Service	68,938
Maintenance and operation	764,626
Service divisions	274,448
National Air Museum	180,285
Canal Zone Biological Area	4,760
Unallotted	460
Total	2,259,000

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In addition $1,073,500 was appropriated to the National Gallery of Art, a bureau of the Institution but administered by a separate board of trustees; and $528,848 was provided in the District of Columbia appropriation act for the operation of the National Zoological Park.

Besides these direct appropriations, the Institution received funds by transfer from other Federal agencies, as follows:

From the State Department, from the appropriation Cooperation with the American Republics, 1949, a total of $97,900 for the operation of the Institute of Social Anthropology, including the issuance of publications resulting from its work.

From the National Park Service, Interior Department, $118,500 for archeological projects in connection with River Basin Surveys.

VISITORS

The number of visitors to the Smithsonian buildings for the year was 2,606,104, an all-time record of attendance. This was an increase of 212,605 over the previous year's attendance. April 1949 was the month of largest attendance with 371,871 visitors; August 1948, the second largest with 313,364. Records for the five buildings show the following number of visitors: Smithsonian, 494,880; Arts and Industries, 1,148,303; Natural History, 689,233; Aircraft, 198,648; Freer, 75,040.

A summary of attendance records is given in table 1:

TABLE 1.—*Visitors to the Smithsonian buildings during the year ended June 30, 1949*

Year and month	Smithsonian Building	Arts and Industries Building	Natural History Building	Aircraft Building	Freer Gallery of Art	Total
1948						
July	61,529	128,635	74,243	24,557	9,510	298,474
August	65,412	136,704	75,026	26,672	9,550	313,364
September	45,178	90,321	51,839	18,460	7,269	213,067
October	34,460	66,329	47,962	13,670	5,460	167,881
November	27,380	50,700	39,829	11,833	4,415	134,157
December	18,242	42,191	23,419	8,512	3,153	95,517
1949						
January	26,748	59,837	37,212	11,085	4,124	139,006
February	22,949	54,470	35,220	10,842	4,032	127,513
March	25,650	66,814	41,452	12,499	5,092	151,507
April	64,804	177,144	97,135	23,532	9,256	371,871
May	47,718	142,007	88,029	19,653	6,172	303,579
June	54,810	133,151	77,867	17,333	7,007	290,168
Total	494,880	1,148,303	[1] 689,233	198,648	75,040	2,606,104

[1] Not including 31,249 persons attending meetings after 4:30 p. m.

SIXTEENTH JAMES ARTHUR ANNUAL LECTURE ON THE SUN

In 1931 the Institution received a bequest from James Arthur, of New York, a part of the income from which was to be used for an annual lecture on some aspect of the study of the sun.

The sixteenth Arthur lecture was given in the auditorium of the National Museum on April 14, 1949, by Sir Harold Spencer Jones, Astronomer Royal of Great Britain, the arrangements being made through Dr. S. A. Mitchell, of the Leander McCormick Observatory, University of Virginia. The title of Sir Harold's lecture was, "The Determination of Precise Time," a subject on which he is a world authority. His lecture will be published in full in the Annual Report of the Board of Regents of the Smithsonian Institution for 1949.

SUMMARY OF THE YEAR'S ACTIVITIES OF THE BRANCHES OF THE INSTITUTION

National Museum.—Approximately 446,000 specimens were added to the collections, for the most part as gifts or as transfers from Government agencies, bringing the total number of catalog entries to 31,679,046. Outstanding accessions for the year included: In anthropology, an important collection of 51 artifacts representing the work of American Indians, Eskimo of Alaska, and natives of Pacific islands, given by Georgetown University; 17 gold-embossed silver vessels given by the Government of Tibet to President Truman and in turn presented by him to the Smithsonian Institution; and valuable skeletal remains recovered in northern Australia by Frank M. Setzler, a member of the Commonwealth of Australia-National Geographic Society-Smithsonian Institution Expedition to Arnhem Land; in zoology, mammal specimens from many distant parts of the world including Northern Territory of Australia, Nepal, Malay Peninsula, Korea, Okinawa, Philippine Islands, and New Guinea, 778 birds from Arnhem Land, Australia, and 1,164 from India and Nepal, 14,000 fishes from the Solomon Islands and the East Indies, and 5,000 from the Persian Gulf and the Red Sea; in botany, 2,382 plants of Fiji, 5,854 plants of Colombia, and 2,157 plants of China; in geology, 20 kinds of minerals hitherto unrepresented in the National collections, a 42-carat brazilianite gemstone, the largest ever found in Brazil, an 8,750-gram stony meteorite that fell at Girgenti, Italy, and many thousands of fossil specimens collected by staff members in various parts of the United States; in engineering and industries, the original Wright Brothers' aeroplane of 1903, a collection of electrical measuring instruments, early lamps, and electronic tubes, some of them made in the 1880's, and an exhibit showing the development of electric hearing aids; in history, a group of relics bequeathed by Gen. John J. Pershing, including uniforms, flags, and medals, a noteworthy collection of European gold and silver coins from the fourteenth to the twentieth century presented by Paul A. Straub, of New York City, and a complete set of Allied military currency presented by the Department of the Army.

Field work was conducted in Arnhem Land in northern Australia, India and Nepal, the Persian Gulf and the Red Sea, New Zealand, the Canadian Arctic, nine different countries in South and Central America, and many parts of the United States. The Museum published its Annual Report, 3 Bulletins, 25 Proceedings papers, and 2 papers in the Contributions from the United States National Herbarium. The division of history was elevated to the status of a full department of the Museum, with five divisions—military history, naval history, civil history, numismatics, and philately.

National Gallery of Art.—During the year there were 1,529,568 visitors to the Gallery, an average daily attendance of 4,225. Accessions as gifts, loans, or deposits numbered 1,174, including 10 paintings and 50 prints and drawings from the estate of the late R. Horace Gallatin, and 891 prints and drawings from Lessing J. Rosenwald. Eleven special exhibitions were held at the Gallery, and two traveling exhibitions were circulated to art galleries, museums, and other organizations throughout the country. In response to inquiries received by the Gallery, nearly 1,000 research problems requiring reports were investigated, and advice was given regarding 233 works of art brought to the Gallery for opinion. Numerous books and articles on art subjects were published by staff members. New publications continued to be added to the literature available at the Gallery for purchase by the public. Some 15,000 persons attended the special tours of the Gallery, 20,000 the "Picture of the Week" talks, and 18,000 the lectures in the auditorium. The Gallery's collections of art works has grown so fast that all available exhibition space was in use during the year. To provide for expansion, contracts have been let for the completion of 12 more galleries in unfinished areas of the Gallery building. Some 50,000 persons attended the 46 Sunday evening concerts given in the Gallery's East Garden Court.

National Collection of Fine Arts.—At the annual meeting of the Smithsonian Art Commission of December 7, 1948, a number of paintings were accepted for the National Collection. The Commission passed a resolution calling attention to the inadequacy of the present art exhibition facilities in the National Museum and recommending that the Secretary of the Smithsonian Institution take action to provide proper space for the preservation and exhibition to the public of the National Collection of Fine Arts. Two miniatures were acquired through the Catherine Walden Myer fund. Under the provisions of the Ranger bequest, seven paintings temporarily assigned to various art institutions were recalled for final consideration by the Smithsonian Art Commission. Two of these paintings were accepted for the National Collection, and the others were returned to the institutions to which they were originally assigned. A large

amount of information on art subjects was furnished to visitors in person, as well as by mail and phone. Members of the staff lectured on art topics to several organizations, and six special art exhibitions were held during the year, for most of which catalogs were furnished by the organizations sponsoring the exhibitions.

Freer Gallery of Art.—Additions to the collections included Chinese bronze, jade, lacquer, marble, and painting; Syrian glass; Syrian or Egyptian gold; Arabic manuscript; Persian manuscript, painting, and stone sculpture; Indian painting; and Turkish painting. The work of the professional staff was devoted to the study of new accessions and to research within the collection of Chinese, Japanese, Iranian, Arabic, and Indian materials. Reports were made upon 2,563 objects and 372 photographs of objects submitted to the Gallery for examination, and 369 Oriental language inscriptions were translated. The repair and restoration of the walls of Whistler's Peacock Room were completed early in the year, and work was begun on the ceiling. Visitors to the Gallery numbered 74,846 for the year, and 1,724 came to the Gallery offices for special purposes. Sixteen groups were given instruction in the exhibition galleries by staff members, and 13 lectures were given in art galleries and museums, before clubs, and to various associations.

Bureau of American Ethnology.—Dr. M. W. Stirling, Director of the Bureau, devoted 4 months to a continuation of his archeological work in Panamá in cooperation with the National Geographic Society. Heretofore undescribed ceramic cultures were found at Utivé and Barriles, and much new information was obtained on the classic Chiriquí and Veraguas cultures. Dr. Frank H. H. Roberts, Jr., continued to direct from Washington the very extensive operations of the River Basin Surveys, a unit of the Bureau created to rescue important archeological sites threatened by the construction of dams and the creation of river basin reservoirs. The work was done in cooperation with the National Park Service, the Bureau of Reclamation, the Army Corps of Engineers, and local organizations. Surveys of threatened sites covered 69 reservoir areas in 21 States. Since the program started, 2,107 archeological sites have been located and recorded, and of these, 456 have been recommended for excavation or testing before they are destroyed by construction work. Dr. John P. Harrington continued his revision of the Maya grammar. Toward the end of the year he went to Old Town, Maine, to pursue ethnological and linguistic studies on the Abnaki Indians. Dr. Henry B. Collins, Jr., conducted archeological excavations at Frobisher Bay on Baffin Island in the Canadian Arctic. Ruins were found of old Eskimo semisubterranean houses made of stones, whale bones, and turf, the evidence showing that the site has been occupied succes-

sively by Eskimos of both the prehistoric Dorset and Thule cultures. Dr. William N. Fenton continued his field work and library research on the Iroquois Indians, obtaining the life history of an aged Seneca and recording Seneca rituals, prayers, and legends. Dr. Gordon R. Willey devoted the year to studying and writing up the results of previous field work. His monographic work, "Archeology of the Florida Gulf Coast," was completed and at the close of the year was in process of being published by the Smithsonian Institution.

The Institute of Social Anthropology, an autonomous unit of the Bureau, is financed by State Department funds to carry out cooperative training in anthropological teaching and research with the other American republics. Institute staff members, under the directorship of Dr. George M. Foster, Jr., continued to give courses in anthropology and to conduct cooperative research and field work in Brazil, Colombia, México, and Perú.

The Bureau published its Annual Report and two Publications of the Institute of Social Anthropology. The last two volumes of the Handbook of South American Indians, volumes 5 and 6, were in press at the close of the year.

International Exchanges.—The Smithsonian International Exchange Service is the official United States agency for the interchange of governmental and scientific publications between this country and the other nations of the earth. The Exchange Service handled during the year a total of 840,125 packages of publications, weighing 796,700 pounds. These figures represent an increase over the previous year of 80,006 packages, but a decrease of 15,489 pounds in weight, indicating by the lighter weight per package that most institutions have about completed shipment of material held up during the war. Shipments are now made to all countries except Rumania, and efforts to resume exchanges with that country are being continued. The number of sets of United States official publications sent abroad in exchange for similar publications of other countries is now 96—58 full and 38 partial sets. There are also sent abroad through the Exchange Service 81 copies of the Federal Register and 75 copies of the Congressional Record.

National Zoological Park.—The collection was improved during the year by the addition of a number of rare animals. At the close of the fiscal year there were 3,724 specimens in the collection, an increase of 927 over the previous year. These represented 755 different species, an increase of 65. Among the rare or unusual animals received by gift, exchange, or purchase were the rare Meller's chameleon, a spectacled bear, a pair of pigmy marmosets—smallest of all monkeys, an African two-horned rhinoceros, a pair of wombats, a pigmy anteater, orang-utans, and chimpanzees. The total number of creatures

born or hatched at the Zoo was 157—56 mammals, 62 birds, and 39 reptiles. Personnel recruitment and training for the organization progressed satisfactorily, and the most needed repairs and minor improvements to buildings and grounds were carried out. The year's total of visitors to the Zoo was the largest ever recorded—3,346,050, an increase of more than 300,000 over the previous year. Groups from schools, some as far away as Maine, Florida, Texas, and California, numbered 1,844, aggregating 93,632 individuals.

Astrophysical Observatory.—Year-long tests at the three most promising sites for a new high-altitude solar observing station indicate that the best skies prevail at the Clark Mountain, Calif., site, the second-best site being Pohakuola, Hawaii. Estimates of the cost of establishing a field station on Clark Mountain, however, proved to be in excess of available funds, forcing postponement of building operations. Data and tables were prepared which simplify computations at the field observing stations by eliminating the tedious curve-plotting process heretofore used in obtaining the air mass. Daily observations of the solar constant of radiation were continued at the Montezuma, Chile, and Table Mountain, Calif., stations. Intercomparisons between the substandard silver-disk pyrheliometer S. I. No. 5 and the instruments in use at Miami, Montezuma, and Table Mountain show no material changes in constants, confirming the adopted scale of pyrheliometry. Special radiation measurements started in 1945 at Camp Lee, Va., under contract with the Office of the Quartermaster General, were continued there, half of the year by the Observatory and half by the Quartermaster Board; similar measurements were also made at Miami, Fla., and at Montezuma, Chile. The work of the Division of Radiation and Organisms has been concerned chiefly with reorganizing and reequipping the laboratories. Besides new office space which has been established, five rooms are being converted into constant-condition rooms for biological experimentation, and four chemistry laboratories will be available. In addition, a photographic laboratory, an X-ray room, a cytology laboratory, an electronics laboratory, and two general laboratories are being arranged.

National Air Museum.—The Air Museum was given the responsibility of receiving, bringing to Washington, and preparing for exhibition the original Wright Brothers aeroplane of 1903, presented to the National Museum in December 1948. A storage depot to be used by the Air Museum until it has a building of its own was acquired in November 1948 in the former Douglas Aircraft plant at Park Ridge, Ill. There a field organization was installed, and the Air Museum assumed custody of the storage facility itself and the large collection of planes and other aeronautical material stored there by the U. S. Air Force for the Museum. The Advisory Board held three meetings

during the year which were devoted mainly to advancing the acquisition of a building site and a suitable museum building in the Washington area. The Museum expects during the coming year to submit to Congress a report regarding sites and a building, the preliminary study of which has been prepared in cooperation with the Public Buildings Administration. Among outstanding accessions of the year were the *Swoose*, the historic B–17–D bomber that served throughout World War II from Bataan to the defeat of Japan, presented by the city of Los Angeles; Maj. Alford Williams' renowned *Gulfhawk–2* presented by the Gulf Oil Co.; a Japanese Baka Bomb, or "suicide plane," transferred by the Department of the Navy; and 10 scale models of recent types of Naval aircraft received from the manufacturers who produced the original planes. New accessions totaled 122 objects from 40 different sources.

Canal Zone Biological Area.—A new building for woodworking and carpenter shops and for living quarters for the warden-caretaker was completed during the year, the old quarters being converted into a two-room laboratory unit. Work on the new 14,000-gallon water tank was halted by heavy rains but can be completed with 2 or 3 weeks of dry weather. The most urgent needs are the fireproofing of existing buildings and the construction of a new six-room laboratory and storage building. Twenty-nine scientists representing many different organizations worked at the laboratory during the year, and their contributions have added materially to our knowledge of tropical life. Among the interesting researches were the work of Drs. Scholander and Walters of the Arctic Research Laboratory at Point Barrow, Alaska, on the metabolic reactions to temperature in various animals and plants in order to obtain a tropical counterpart for similar work on Arctic forms in Alaska; the studies of Drs. Clark and Soper of the Research Laboratory of Eastman Kodak on the effects of tropical conditions on photographic equipment and materials, including color film; and the Resident Manager's own special studies, particularly the long-term termite-resistance tests.

PUBLICATIONS

In carrying out the diffusion of knowledge, the Institution issues eight regular series of publications and six others that appear less frequently. All these series, embodying the results of Smithsonian researches, are distributed free to more than a thousand libraries, both here and abroad, as well as to a large list of educational and scientific organizations. The findings of Smithsonian scientists, chiefly in the fields of anthropology, biology, geology, and astrophysics, are therefore made readily available to all through this wide free distribution.

A total of 71 separate volumes and pamphlets were issued during the past year. Among the outstanding publications to appear were Dr. Henry Field's compilation in the Smithsonian Miscellaneous Collections entitled "Contributions to the Anthropology of the Soviet Union," which presents, for the first time in English, accounts of recent findings in this little-known area; a revised edition of the popular handbook of the National Aircraft Collection, which is in effect a brief history of aeronautics from the mythical flying horses of antiquity to the supersonic jet planes of today; two more volumes in the famous series of Life Histories of North American Birds, prepared by A. C. Bent, bringing to 17 the number so far issued in the series; and a paper by Jason R. Swallen on new grasses from several countries of South and Central America, in the Contributions from the United States National Herbarium.

The total number of copies of publications in all series distributed during the year was 267,491. A complete list of the year's publications will be found in the report of the Chief of the Editorial Division, Appendix 12.

LIBRARY

Of the 57,671 publications received by the Smithsonian library during the year, 7,287 came as gifts from many different donors. Another 17,713 were periodicals mostly received in exchange for Smithsonian publications from research institutions and other scientific and educational organizations throughout the world. Containing the record of progress in science and technology, these periodicals are indispensable in the prosecution of the Institution's own work.

Increasingly heavy demands upon reading and reference services of the library were noted during the year, the interlibrary loans totaling 2,619 publications to 89 different libraries. The new position of assistant librarian in charge of the Astrophysical Observatory library was filled by the promotion of an acquisitions assistant.

New exchanges arranged during the year numbered 338; 6,884 volumes and pamphlets were cataloged, and 31,184 cards were added to catalogs and shelflists; 1,060 volumes were sent to the bindery, and 1,026 were repaired in the Museum.

At the close of the year, the library's holdings totaled 921,206 volumes, more than half of which are housed in the Library of Congress as the Smithsonian Deposit.

Respectfully submitted.

ALEXANDER WETMORE, *Secretary.*

APPENDIX 1

REPORT ON THE UNITED STATES NATIONAL MUSEUM

SIR: I have the honor to submit the following report on the condition and operations of the United States National Museum for the fiscal year ended June 30, 1949.

COLLECTIONS

Approximately 446,000 specimens (88,000 less than last year) were incorporated into the National collections during the year and were distributed among the six departments as follows: Anthropology, 4,099; zoology, 279,621; botany, 38,708; geology, 109,499; engineering and industries, 2,610; and history, 11,104. The decrease in the number of specimens accepted for the Museum's collections may be attributed in part to the inadequacy of available storage facilities for the preservation of such materials; consequently, a finer screening of collections from prospective donors is now mandatory. Most of the accessions were acquired as gifts from individuals or as transfers from Government departments and agencies. The complete report on the Museum, published as a separate document, includes a detailed list of the year's acquisitions, of which the more important are summarized below. Catalog entries in all departments now total 31,679,046.[1]

Anthropology.—The most noteworthy additions to the archeological collections were as follows: A black-figured Attic lecythus of the fifth century, B. C., presented to President Harry S. Truman as a token of gratitude from the people of Greece and lent by the President; 11 gold-plated ornaments from Veraguas, Panamá, and 2 gold fishhooks from Colombia, a gift from Karl P. Curtis; and 47 prehistoric earthenware vessels from the Valley of Nasca, Perú, presented to the late Gen. John J. Pershing by former Peruvian President Augusto B. Leguia and donated by General John J. Pershing.

Handicrafts and material culture of many of the world's peoples were represented in the additions to the ethnological collections. An unusually important collection of 51 specimens representing the work of American tribes of the Great Plains and the Great Lakes, of Arizona and New Mexico, as well as of the Eskimo of Alaska, of the Igorot of the Philippine Islands, and of the Marquesans and Maori of the

[1] The revised tabulation of the National collection of insects during the past year, in addition to the normal increment, has increased last year's total by more than 4,400,000 specimens.

Southeast Pacific, assembled over a period of more than a century, was presented by Georgetown University. President Harry S. Truman presented to the Smithsonian Institution 17 gold-embossed silver vessels received at the White House as a gift from the Government of Tibet in appreciation of an American gift of wireless receiving and transmitting sets made during World War II. Included are two butter lamps and stands, four teacup stands and covers, two bowls for grain offerings, one teapot, and two beer mugs, all decorated in gold-embossed designs derived from Chinese-Tibetan folklore and Buddhist religious art. A collection of 287 folk, costume, and historical portrait dolls, representing the native dress of peoples of many lands, was received as a bequest from the late Mrs. Frank Brett Noyes. The Don Diego Columbus mahogany table, traditionally known as the writing desk of Diego Columbus, was conditionally bequeathed by Mrs. Edith Keyes Benton. This table had been preserved for centuries in the cathedral of Santo Domingo City and was presented by Archbishop Nouel to Commander Frederick L. Benton, U.S.N., in recognition of his work in Santo Domingo during the influenza epidemic of 1918. One of the rarest of musical instruments, a musical gong, *kyung*, carved from white marble, was presented by Ju Whan Lee, director of the Korean Court Music Conservatory at Seoul, Korea.

The largest accession received by the division of physical anthropology consisted of the skeletal remains recovered in northern Australia by Frank M. Setzler, a member of the Commonwealth of Australia-National Geographic Society-Smithsonian Institution Expedition to Arnhem Land. Australian skeletal material available for study in the United States is rather limited. Four casts of African fossil primates, which illustrate certain characteristics of antecedent specialization, were also acquired during the year.

Zoology.—The collections made by the Museum staff detailed to the Arnhem Land field expedition, under the joint sponsorship of the Commonwealth of Australia, National Geographic Society, and the Smithsonian Institution, have added many previously unrepresented forms of animal life to the National collections. These collections included not only vertebrates but invertebrates as well.

Accessions that enhanced the usefulness of the mammalian collection came from the Northern Territory of Australia, Nepal, Malay Peninsula, Korea, Okinawa, Philippine Islands, New Guinea, and New Hampshire. Field work financed wholly or in part by the W. L. Abbott fund resulted in the addition of birds not hitherto represented in the National collection. Included among these accessions were 2,815 skins and 38 eggs of Colombian birds; 900 skins, 24 skeletons, and 2 sets of eggs of Panamanian birds; 778 bird skins, many of which were not represented in the collection, as well as 51 skeletons and 2 eggs

from Arnhem Land, Australia; and 1,164 bird skins procured by the joint National Geographic Society-Yale University-Smithsonian Institution Expedition to India and Nepal. Other accessions comprised 611 bird skins from Nyasaland; 177 birds and 1 egg from northeastern Venezuela; 171 bird skins from Pacific War areas; and 125 bird skins from Korea.

Snakes, lizards, and frogs from Arnhem Land, amphibians from Perú, reptiles and amphibians from Honduras, and a general collection from Virginia and North Carolina constituted the most important additions to the herpetological collection.

The most noteworthy accessions received by the division of fishes were nearly 14,000 specimens from the Solomon Islands and the East Indies, which were presented by Dr. Wilbert M. Chapman; 14,300 from Arnhem Land; and approximately 5,000 from the Persian Gulf and the Red Sea, resulting from a survey sponsored by the Arabian-American Oil Co. Other important collections of fishes came from Puerto Rico, Panamá, British Columbia, and Florida.

Approximately 25,000 miscellaneous insects from South Pacific Islands came to the Museum by transfer from the U. S. Commercial Co. Among other large lots were approximately 12,000 flies; 3,500 chalcidoid wasps; 500 beetles; and some 53,000 insects transferred from the United States Bureau of Entomology and Plant Quarantine.

During the year considerable significant material was added to the marine invertebrate collection, of which the most important accessions were 11,765 miscellaneous invertebrates from the Department of Zoology, University of California; 70 lots of paratypes, hypotypes, and topotypes of hydroids from the Allan Hancock Foundation, University of Southern California; 760 marine invertebrates from California and Mexico; 709 specimens from Bahama Islands; 1,781 from Pacific Islands and California; 452 from the Persian Gulf and the Red Sea; and 859 from Arnhem Land. By transfer from the Office of Naval Research, the Museum acquired 3,668 invertebrates from Point Barrow, Alaska. The United States Geological Survey transferred 568 specimens from the Marianas Islands.

A rare deep-water *Pleurotomaria*, dredged at a depth of 160 fathoms off Natal, South Africa, and presented by Dr. Cecil von Bonde, constituted the most notable accession received by the division of mollusks. From other sources the division received 250 Peruvian terrestrial and fresh-water mollusks and 540 marine mollusks from Canton Island, and 150 Japanese land mollusks. Exchanges brought to the Museum approximately 1,080 shells from Spain and lesser numbers from South Africa, Italy, and Cuba. By transfer the Museum received about 1,200 mollusks obtained in the Caroline Islands from the United States Geological Survey; approximately 30,600 specimens

from the Naval Medical Research Institute; and 600 marine and land shells of the Solomon Islands from the Naval Medical School. Members of the staff obtained about 1,200 mollusks in Arnhem Land and some 1,500 in the region of the Persian Gulf and the Red Sea.

Botany.—As exchanges, the National Herbarium received 2,382 plants, comprising a collection made in Fiji by Dr. A. C. Smith, from the Arnold Arboretum of Harvard University; 5,854 plants of Colombia from the Facultad de Agronomía, Universidad Nacional, Medellín; and 2,157 Chinese plants from the National Szechwan University. The Division of Rubber Plant Investigations, United States Department of Agriculture, transferred 865 plants from eastern Colombia. The Oficina de Estudios Especiales, Mexico City, presented 394 Mexican grasses. A noteworthy gift of 295 ferns of Micronesia came to the Herbarium from the Bernice P. Bishop Museum, Honolulu, and Dr. Gunnar Degelius, University of Uppsala, presented 602 lichens from various localities.

Geology.—Gifts and exchanges contributed to the growth of the mineral collections. More than 20 kinds of minerals hitherto unrepresented in the collections were received. Forty exceptionally good examples of rare secondary uranium minerals from Katanga, Belgian Congo, as well as other unusual minerals were added to the Roebling collection. A fine collection of rare copper sulfates from Chuquicamata, Chile, was presented by the Chile Exploration Co. Included among the additions to the Canfield collection were a gem-quality golden beryl crystal weighing over 1,800 grams from Brazil and an unusually large zircon crystal from Australia. The Chamberlain bequest provided funds for the purchase of a 42-carat brazilianite gemstone, the largest as yet found in Brazil. An 8,750-gram stony meteorite, which fell at Girgenti, Italy, was received as a gift from Dr. Stuart H. Perry, and other meteorites were acquired either as gifts or in exchange.

Several large collections of invertebrate fossils were presented to the Museum, three of the larger lots being 7,500 Middle Ordovician fossils, mostly bryozoans, from O. C. Cole, Kenyon, Minn.; 2,150 Pennsylvanian fossils from Robert Stark, Grapevine, Tex.; and 10,000 fossil mollusks from A. L. Bowsher. Types and paratypes of Upper Cretaceous trilobites, Tertiary mollusks, Pennsylvanian goniatites, Ordovician invertebrates, and Cretaceous Foraminifera were included in other accessions. Through funds provided by the Walcott bequest, the Museum acquired 40,000 invertebrate fossils from the Devonian, Mississippian, and Pennsylvanian deposits in west Texas, New Mexico, and Arizona collected by Associate Curator A. L. Bowsher and William Allen; 25,000 Paleozoic fossils from Texas and Oklahoma collected by Curator G. A. Cooper and Associate Curator A. R.

Loeblich; 2,500 Middle Ordovician fossils collected by Dr. Cooper in Tennessee and Virginia; and 2,000 Permian and Jurassic ammonites and brachiopods from Sicily. As usual the year's accessions included a number of transfers from the United States Geological Survey.

A nearly complete skeleton of the Triassic phytosaur *Machaeroprosopus gregorii*, from the Chinle formation near St. Johns, Ariz., excavated and transferred to the Museum by the United States Geological Survey, constitutes the outstanding acquisition of the year in vertebrate paleontology. Through the Walcott funds there were received articulated skeletal remains of the condylarth *Meniscotherium robustum* and the complete skeleton of a large ichthyodectid fish. Outstanding gifts include specimens of the Devonian arthrodiran fish *Eudinichthys terrilli*, a partial skeleton of the Pleistocene jaguar *Panthera augusta*, an incomplete skull of the Pleistocene walrus *Odobenus virginianus*, and a portion of the skull of a Miocene tapir. The Smithsonian River Basin Surveys transferred mammalian fossils from Eocene and Oligocene deposits of Wyoming and Montana.

Engineering and industries.—The presentation of the historic aeroplane invented and built by Wilbur and Orville Wright and flown by them at Kitty Hawk, N. C., on December 17, 1903, was witnessed by 1,000 or more distinguished guests at the formal ceremony held in the north entrance hall of the Arts and Industries Building of the United States National Museum on December 17, 1948. The presentation was made by Milton Wright, of Dayton, Ohio, on behalf of the estate of Orville Wright. The Chancellor of the Smithsonian Institution, Chief Justice Fred M. Vinson, accepted the Wright Brothers' aeroplane on behalf of the Nation, and the formal acceptance address was delivered by Vice President-Elect Alben W. Barkley.

A collection of electrical measuring instruments, early lamps, and electronic tubes, some of which were constructed in the 1880 decade, was presented by the Weston Electrical Instrument Corp. The Museum is indebted to the United States Signal Corps Laboratories for an exhibit illustrating radar and microwave radio-relay communication. From the Cork Institute of America the section of wood technology received 100 samples and 9 photographs which illustrate the production and utilization of cork bark. Etchings and serigraphs by Forain, Margo, Velonis, Detwiller, and Kainen were added to the graphic arts collection through the Dahlgreen fund. A Marcy Sciopticon Magic Lantern, a kerosene-lamp projector, patented 1868–69, was the most interesting accession in the photographic section. The division of medicine and public health received from Telex, Inc., a number of devices that show the development of electric hearing aids.

History.—Several unusual items were added during the past year to the National collection of American antiques and personal relics, and of these the spirit set and silverware owned by the Maryland surveyor Andrew Ellicott (1754–1820) are the oldest. A marble slab from the Temple of Wingless Victory on the Athens Acropolis, presented to President Truman by a Greek delegation on March 28, 1949, as a token of gratitude from the people of Greece, was lent by the President. The most interesting additions to the costumes collection were a parasol made of pheasant feathers and an old bonnet of the type known as "calash." The outstanding accessions to the military collection were the relics bequeathed by Gen. John J. Pershing, comprising personal uniforms, presentation flags, medals, decorations, and other mementos of his military service. Forty-four portraits of World War II heroes painted by Joseph Cummings Chase were presented to the Museum by the artist.

The collection of gold and silver coins, chiefly European issues dating from the fourteenth to the twentieth century, which was received as a gift from Paul A. Straub, of New York City, constitutes the most noteworthy accession acquired by the division of numismatics in recent years. A complete set, in duplicate, of Allied military currency was presented by the Department of the Army.

EXPLORATION AND FIELD WORK

Staff specialists in the departments of anthropology, zoology, botany, and geology were engaged during the year in field work in South, Central, and North America, New Zealand, and Australia.

The four staff members—Frank M. Setzler, head curator of anthropology; Dr. David H. Johnson, associate curator of mammals; Herbert G. Deignan, associate curator of birds; and Dr. Robert R. Miller, associate curator of fishes—who participated in the technical work of the Commonwealth of Australia-National Geographic Society-Smithsonian Institution Expedition to Arnhem Land under the leadership of Charles P. Mountford, returned to Washington, D. C., late in 1948 following completion of the field work. The base camp of the expedition, which had been established April 4, 1948, on Groote Eylandt in the Gulf of Carpentaria, was moved during July 1948 to Yirrkala on the beach of Arafura Sea near the northeastern corner of Arnhem Land. A third camp was established September 21, 1948, at Oenpelli on East Alligator River near the foot of the high Arnhem Land escarpment. The entire party returned to Darwin in November to pack the collections and field equipment for shipment to the participating institutions.

During the first 3 months of 1949, Dr. T. Dale Stewart, curator of physical anthropology, was engaged in taking anthropometric measurements of some 200 Mayan-speaking Indians in the highlands of Guatemala. Most of this field study was carried on at Soloma in the Department of Huehuetenango, and at Santa Clara la Laguna in the Department of Sololá. A secondary project was the examination of skeletal remains at archeological sites in the highlands.

As in the previous year, Dr. Waldo R. Wedel, associate curator of archeology, was detailed to the River Basin Surveys under the Bureau of American Ethnology to supervise field and laboratory operations in the Missouri Valley.

The National Geographic Society-Yale University-Smithsonian Institution Expedition to India and Nepal, which was directed by S. Dillon Ripley, brought back important collections of birds and mammals from the Karnali Valley in western Nepal and the Kosi Valley in eastern Nepal—regions rarely visited by naturalists.

For 5 months during the middle of 1948, Donald S. Erdman, division of fishes, participated in a fishery survey in the Persian Gulf and Red Sea under the auspices of the Arabian-American Oil Co.

At the invitation of the Plywoods-Plastics Corp., Dr. Henry W. Setzer, associate curator, division of mammals, worked in Costa Rica and obtained specimens of mammals and birds in the valleys of the Río Estrella and the Río Turrialba.

Dr. A. Wetmore and W. M. Perrygo conducted ornithological field work in the eastern section of the Province of Panamá, Republic of Panamá, a region they had not explored on previous trips. The field work of M. A. Carriker, Jr., in the Río Sinú region of northwestern Colombia, resulted in the preparation of one of the most complete collections of birds thus far obtained in the area adjacent to Panamá. Charles O. Handley, Jr., temporarily employed as assistant curator of birds, departed from Washington in March 1949 under a cooperative arrangement with the Weather Bureau to study the birds and mammals in one area of the Canadian Arctic Archipelago.

Botanical field projects participated in by the staff included the following: After adjournment of the Second South American Botanical Congress held at Tucumán, Argentina, E. P. Killip, head curator of botany, and Dr. Lyman B. Smith, associate curator of phanerogams, made collections in northwestern Argentina; large numbers of plants were assembled by Mr. Killip in the Santiago-Valparaiso region of Chile, and other specimens were subsequently obtained at Cali, Medellín, and Bogotá, Colombia; Dr. Smith collected plants in the vicinity of São Paulo and Río de Janeiro, Brazil.

Following the adjournment of the Seventh Pacific Science Congress held between February 2 and 22, 1949, Dr. E. H. Walker, associate

curator of phanerogams, remained in New Zealand for about 6 weeks at the invitation of the University of New Zealand to carry on botanical field work on the two main islands and on Stewart Island. Jason R. Swallen, curator of grasses, at the request of Dr. C. L. Lundell, director of the Texas Research Foundation, made a survey of the grasses of the Kingsville region, Texas. George A. Llano, associate curator of cryptogams, is making a special study of the ecology of the lichens of the Arctic slopes of the Brooks Mountains in northern Alaska under a project sponsored by the Arctic Institute of North America. Paul S. Conger, associate curator of diatoms, devoted 2 months during the summer of 1948 to an investigation of the ecology of diatoms at the Chesapeake Biological Laboratory, Solomons Island, Md. Research Associate F. A. McClure continued his field studies of American bamboos in Guatemala, El Salvador, Honduras, Puerto Rico, Jamaica, and Trinidad.

A wide variety of paleontological field work financed by the Walcott bequest enabled the staff to obtain new materials for the collections. Included among these additions are fossil fishes from the Green River Eocene beds in northeastern Utah and the Pierre Cretaceous deposits in eastern Wyoming excavated by Dr. D. H. Dunkle and A. C. Murray; Eocene mammalian fossils from the Bridger Basin in western Wyoming collected by Dr. C. L. Gazin; Paleocene mammalian fossils found by Dr. C. L. Gazin and F. L. Pearce in the San Juan Basin of northwestern Utah; Permian and Mississippian invertebrate fossils obtained by Dr. G. A. Cooper and Dr. A. R. Loeblich, Jr., in Texas and Oklahoma; Devonian, Mississippian, and Pennsylvanian fossils from New Mexico and Texas collected by A. L. Bowsher and William Allen; and Jurassic microfossils from Montana, Wyoming, and South Dakota obtained by Dr. A. R. Loeblich, Jr., and Dr. Ralph W. Imlay.

PUBLICATIONS

Thirty-one Museum publications were issued during the year: 1 Annual Report, 3 in the Bulletin series, 25 in the Proceedings, and 2 numbers of the Contributions from the United States National Herbarium. A list of these is given in the complete report on Smithsonian publications, appendix 12. Especially noteworthy are two numbers of A. C. Bent's Life Histories of North American Birds: one on the nuthatches, wrens, thrashers, and their allies, the other on the thrushes, kinglets, and their allies—completing 17 volumes in this popular series. The eighteenth is now in press.

The distribution of volumes and separates to libraries and other institutions and to individuals aggregated 66,459 copies.

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CHANGES IN ORGANIZATION

One important change in the organization of the United States National Museum was effected during the year. On August 16, 1948, the division of history was raised to the status of a department. Charles Carey, who received his first appointment to the Museum staff on November 2, 1920, was named acting head curator of the department of history. The functions of this department were allocated to five divisions—military history, naval history, civil history, numismatics, and philately.

Respectfully submitted.

REMINGTON KELLOGG, *Director.*

Dr. A. WETMORE,
Secretary, Smithsonian Institution.

APPENDIX 2

REPORT ON THE NATIONAL GALLERY OF ART

SIR: I have the honor to submit, on behalf of the Board of Trustees, the twelfth annual report of the National Gallery of Art, for the fiscal year ended June 30, 1949. This report is made pursuant to the provisions of section 5 (d) of Public Resolution No. 14, Seventy-fifth Congress, first session, approved March 24, 1937 (50 Stat. 51).

ORGANIZATION

The statutory members of the Board of Trustees of the National Gallery of Art are the Chief Justice of the United States, the Secretary of State, the Secretary of the Treasury, and the Secretary of the Smithsonian Institution, ex officio. The five general trustees continuing in office during the fiscal year ended June 30, 1949, were Samuel H. Kress, Ferdinand Lammot Belin, Duncan Phillips, Chester Dale, and Paul Mellon. The Board of Trustees held its annual meeting on May 3, 1949. Samuel H. Kress was reelected President and Ferdinand Lammot Belin Vice President, to serve for the ensuing year. Donald D. Shepard continued to serve during the year as Advisor to the Board.

All the executive officers of the Gallery continued in office during the year:

Huntington Cairns, Secretary-Treasurer.
David E. Finley, Director.
Harry A. McBride, Administrator.
Huntington Cairns, General Counsel.
John Walker, Chief Curator.
Macgill James, Assistant Director.

The three standing committees of the Board, as constituted at the annual meeting May 3, 1949, were as follows:

EXECUTIVE COMMITTEE

Chief Justice of the United States, ex officio, Fred M. Vinson, Chairman.
Samuel H. Kress, Vice Chairman.
Ferdinand Lammot Belin.
Secretary of the Smithsonian Institution, Dr. Alexander Wetmore.
Paul Mellon.

FINANCE COMMITTEE

Secretary of the Treasury, ex officio, John W. Snyder, Chairman.
Samuel H. Kress, Vice Chairman.
Ferdinand Lammot Belin.
Chester Dale.
Paul Mellon.

ACQUISITIONS COMMITTEE

Samuel H. Kress, Chairman.
Ferdinand Lammot Belin, Vice Chairman.
Duncan Phillips.
Chester Dale.
David E. Finley, ex officio.

On June 30, 1949, the Government employees on the staff of the National Gallery of Art totaled 309, as compared with 312 employees as of June 30, 1948. The United States Civil Service regulations govern the appointment of employees paid from appropriated public funds.

Throughout the year a high standard of operation has been maintained by all departments of the Gallery in the protection of the Gallery's collections of works of art and the maintenance of the Gallery building and grounds.

APPROPRIATIONS

For the fiscal year ended June 30, 1949, the Congress of the United States appropriated for the National Gallery of Art the sum of $1,073,500 to be used for salaries and expenses in the operation and upkeep of the Gallery, the protection and care of works of art, and administrative and other expenses. This amount includes the regular appropriation of $966,000, and a supplemental appropriation of $107,500. The supplemental appropriation was made to provide $4,600 to meet in part an increase in the rates for electric current, which could not be foreseen by the Gallery and estimated for at the time the 1949 budget was submitted to the Congress; and the balance of $102,900 was necessary to meet the pay increases, effective July 11, 1948, amounting to $330 per annum to each employee as authorized by Public Law 900, Eightieth Congress.

From these appropriations the following expenditures and encumbrances were incurred:

Personal services	$940, 100. 00
Printing and binding	6, 626. 95
Supplies, equipment, etc	126, 739. 30
Unobligated balance	33. 75
Total	1, 073, 500. 00

ATTENDANCE

During the fiscal year 1949 there were 1,529,568 visitors to the Gallery, an average daily attendance of about 4,225.

From March 17, 1941, the day on which the National Gallery of Art was first opened to the public, to June 30, 1949, there have been 15,070,976 visitors to the Gallery.

ACCESSIONS

There were 1,174 accessions by the National Gallery of Art, as gifts, loans, or deposits, during the fiscal year. Most of the paintings and a number of the prints were placed on exhibition.

PAINTINGS

During the fiscal year the Board of Trustees of the National Gallery of Art received 10 paintings from the Estate of the late R. Horace Gallatin. The paintings are as follows:

Artist	*Title*
Jean-Charles Cazin	The Windmill.
Jean-Baptiste-Camille Corot	River View.
Charles-Francois Daubigny	Landscape with Figures.
Diaz de la Pena	Forest Scene.
Jules Dupre	The Old Oak.
Francesco Guardi	The Rialto Bridge, Venice.
Henri-Joseph Harpignies	Landscape.
School of Claude Lorrain	Harbor at Sunset.
Jean-Francois Millet	The Bather.
Theodore Rousseau	Landscape with Boatman.

A painting by Murillo, "The Return of the Prodigal Son," given by the Avalon Foundation, was accepted by the Board of Trustees on December 10, 1948. At the same time the Board accepted the portrait of Daniel Boardman, by Ralph Earl, from Mrs. W. Murray Crane; "Interior of a Church," by Pieter Neeffs, from Senator Theodore Francis Green of Rhode Island; and two paintings, "Repose," by John Singer Sargent, and "Head of a Girl," by James Abbott McNeill Whistler, from Curt H. Reisinger. On December 22, 1948, the Board of Trustees accepted from Dr. G. H. A. Clowes a painting, "Allegory," Venetian School about 1500, and from Vladimir Horowitz a painting, "Head of a Young Girl," by Renoir. The Board of Trustees accepted from Miss Georgia O'Keeffe on March 8, 1949, a gift of the following three paintings:

Artist	*Title*
Marsden Hartley	Landscape No. 5.
Arthur G. Dove	Moth Dance.
Georgia O'Keeffe	To be selected later.

During the fiscal year, the portrait of Captain Patrick Miller by Raeburn, previously on loan, was given to the Gallery by Mrs. Dwight Davis.

SCULPTURE

On December 10, 1948, the Board of Trustees accepted from Stanley Mortimer, Jr., a "Portrait Bust of a Member of the Order of San Iago" attributed to Leone Leoni, which had previously been on loan to the Gallery. At the same time the Board accepted from Miss Mildred Howells a portrait medallion of her father, William Dean Howells, and herself, by Augustus Saint-Gaudens, to be held for a National Portrait Gallery.

PRINTS AND DRAWINGS

A gift from Lessing J. Rosenwald of 309 additional prints and drawings was accepted on December 10, 1948, to be added to the Lessing J. Rosenwald Collection. At the same time, two volumes of "The Georgics" of Virgil with 119 illustrations by Andre Dunoyer de Segonzac were accepted as a gift from the artist. This gift was inspired by an earlier gift to the Gallery of a collection of Segonzac's prints and drawings made in memory of the late Frank Crowninshield. The Board of Trustees, during the fiscal year, received 50 prints and drawings from the collection of the late R. Horace Gallatin. On March 8, 1949, the Board accepted from Miss Georgia O'Keeffe three water colors by John Marin entitled "Movement, Boat and Sea, Deer Isle, Maine," "White Mountain Country, Summer," and "Storm over Taos, New Mexico." The Board of Trustees accepted from Mr. Rosenwald on May 3, 1949, 582 additional prints and drawings. Received during the fiscal year from George Matthew Adams were 20 etchings by Alphonse Legros.

PHOTOGRAPHS

The Board of Trustees on March 8, 1949, accepted from Miss Georgia O'Keeffe a key set of photographs, consisting of about 1,500 prints, by Alfred Stieglitz.

EXCHANGE OF WORKS OF ART

During the fiscal year 1949 the Board accepted the offer of Chester Dale to exchange the portrait of Ralph Waldo Emerson by Sully, which was being held for the National Portrait Gallery, for the portrait of the Sicard David Children by Sully, which was then on loan to the Gallery. The Board also accepted the offer of Lessing J. Rosenwald to exchange the prints "Sacrifice to Priapus," by Jacopo de Barbari, "Conversion of St. Paul," by Lucas van Leyden, and

"Solomon Worshipping Idols," by the Master M. Z., for superior impressions of like prints now included in the Rosenwald Collection at the National Gallery of Art.

WORKS OF ART ON LOAN

During the fiscal year 1949 the following works of art were received on loan by the National Gallery of Art:

From	*Artist*
Chester Dale, New York, N. Y.:	
Picador	Domergue.
Mrs. Philip Lydig	Zuloaga.
San Sepulveda	Zuloaga.
La Rubia del Abanico	Zuloaga.
Mrs. Brooks Goddard, Paris, France (via the National Collection of Fine Arts):	
Musical Inspiration	Romaine Brooks Goddard.
The Balcony	Romaine Brooks Goddard.
Sketch	Romaine Brooks Goddard.
Self-Portrait	Romaine Brooks Goddard.
Alfred Stieglitz Collection: (Miss Georgia O'Keeffe, New York, N. Y.)	
Chimneys and Water Tower	Demuth.
A Cow's Skull with Red	O'Keeffe.
Line and Curve	O'Keeffe.
Chauncey Stillman, New York, N. Y.:	
A Halberdier	Pontormo.
George Matthew Adams, New York, N. Y.:	
3 etchings	Alphonse Legros.
C. S. Gulbenkian, Lisbon, Portugal:	
28 pieces of Egyptian sculpture.	
3 pieces of eighteenth-century French furniture.	
1 fourteenth-century Arabian bottle.	
1 sixteenth-century Persian rug.	
7 eighteenth-century French books.	
The Italian Government:	
A marble statue of David	Michelangelo.
Robert Woods Bliss, Washington, D. C.:	
32 objects of Pre-Columbian art.	

LOANED WORKS OF ART RETURNED

The following works of art on loan were returned during the fiscal year 1949:

To	*Artist*
Chester Dale, New York, N. Y.:	
On the Beach	Winslow Homer.
Mme. Charlotte Fuerstenberg, at New York, N. Y.:	
Sea at Estaque	Cezanne.

Anonymous loan:
Paradise Valley ..... John La Farge.
Robert Woods Bliss, Washington, D. C.:
16 objects of Pre-Columbian art.
Peabody Museum, Harvard University, Cambridge, Mass.:
70 objects of Pre-Columbian art.

WORKS OF ART LOANED

During the fiscal year 1949, the Gallery loaned the following works of art for exhibition purposes:

To	*Artist*
Albright Art Gallery, Buffalo, N. Y.:	
Joseph Widener	Augustus John.
Art Institute of Chicago, Chicago, Ill.:	
Alexander Hamilton	Trumbull.
William Thornton	Stuart.
Columbus Gallery of Fine Arts, Columbus, Ohio:	
Abraham Lincoln	Healy.
Corcoran Gallery of Art, Washington, D. C.:	
The White Girl	Whistler.
Dallas Museum of Fine Arts, Dallas, Tex.:	
George Washington (Vaughan-Sinclair)	Stuart.
Dayton Art Institute, Dayton, Ohio:	
Lackawanna Valley	Inness.
Fort Worth Art Association, Forth Worth, Tex.:	
Breezing Up	Winslow Homer.
Metropolitan Museum of Art, New York, N. Y.:	
Captain Charles Stewart	Sully.
Pack Memorial Library, Asheville, N. C.:	
Thomas Dawson	Mather Brown.
Henry Laurens	Copley.
Andrew Jackson	Earl.
Williamina Moore	Feke.
General William Moultrie	Charles Willson Peale.
John C. Calhoun	Rembrandt Peale.
John Baptista Ashe	Stuart.
Matilda Caroline Cruger	Stuart.
Francis Hopkinson	Sully.
Ann Biddle Hopkinson	Sully.
Josias Allston	Theus.
William Rogers	Trumbull.
Portraits, Inc., New York, N. Y.:	
Mrs. Chester Dale	Bellows.
Mr. Chester Dale	Bellows.
Scott and Fowles, New York, N. Y.:	
Joseph Widener	Augustus John.

EXHIBITIONS

During the fiscal year 1949 the following exhibitions were held at the National Gallery of Art:

American Paintings from the Collection of the National Gallery of Art. Exhibition of American paintings, featuring a group of portraits from Pocahontas to General Eisenhower. Continued from previous fiscal year, through July 11, 1948.

American Folk Art. Exhibition consisting of 104 water-color renderings from the Index of American Design. July 18 to September 7, 1948.

American Graphic Art from the Eighteenth Century to the Present Day. Selection from the collections of the Library of Congress, the Smithsonian Institution, and the National Gallery of Art. September 19 to November 14, 1948.

Paris the Favorable Climate. Exhibition of prints and drawings by Bonnard, Vuillard, Maurice Denis, Andre Dunoyer de Segonzac, and Matisse, arranged in memory of Frank Crowninshield. November 21, 1948, to January 11, 1949.

Michelangelo's "David." Lent to the National Gallery of Art by the Italian Government. January 24 to June 28, 1949.

Gulbenkian Collection of Egyptian Sculpture. Lent for an indefinite period to the National Gallery of Art by C. S. Gulbenkian. Opened January 30, 1949.

Studies of Medieval Cathedrals. Exhibition of photographic studies lent to the National Gallery of Art by Clarence Ward, head of the Department of Fine Arts, Oberlin College. January 30 to February 13, 1949.

Gulbenkian Collection of Eighteenth Century French Objects. Additions to earlier loan by C. S. Gulbenkian, on exhibition at the National Gallery of Art for an indefinite period. Opened February 20, 1949.

American Paintings from the Collection of the National Gallery of Art. February 20 to April 10, 1949.

Early Italian Engraving. Exhibition of early Italian engravings, lent to the National Gallery of Art by various museums and anonymous lenders. April 17 to June 19, 1949.

R. Horace Gallatin Collection. Exhibition of prints bequeathed to the National Gallery of Art by Mr. Gallatin. Opened June 26, 1949.

The following exhibitions were displayed in the cafeteria corridor of the National Gallery of Art during the fiscal year 1949:

Whistler Prints. Rosenwald Collection; one gift of Myron A. Hofer. Continued from previous fiscal year through July 18, 1948.

Audubon Prints. Mrs. Walter B. James Collection. July 20 to December 12, 1948.

Index of American Design. Water-color renderings of early American toys. December 13, 1948, to February 15, 1949.

Index of American Design. Water-color renderings of early American furniture and textiles. February 16 to March 28, 1949.

Legros Prints. George Matthew Adams Collection. March 29 to May 15, 1949.

Seymour Haden Prints. Rosenwald Collection and gift of Miss Elisabeth Achelis. May 16 to June 12, 1949.

Ostade Prints. Rosenwald Collection and gift of Mrs. Addie Burr Clark. Opened June 13, 1949.

TRAVELING EXHIBITIONS

Rosenwald Collection.—Special exhibitions of prints from the Rosenwald Collection were circulated to the following places during the fiscal year 1949:

Kenneth Taylor Galleries, Nantucket, Mass.:
26 French prints.
July 26 to August 23, 1948.
Watkins Gallery, American University, Washington, D. C.:
26 French prints.
October 13 to 30, 1948.
Los Angeles County Museum, Los Angeles, Calif.:
20 Blake prints.
October 1948.
Wyncote Woman's Club, Wyncote, Pa.:
11 prints.
October 17 to 23, 1948.
Rutgers College, New Brunswick, N. J.:
9 Italian prints.
October 1948.
Fogg Museum of Art, Harvard University, Cambridge, Mass.:
1 Rembrandt drawing.
November 1948.
Museum of Modern Art, New York, N. Y.:
1 Munch print.
November 1948 to January 1949.
Walters Art Gallery, Baltimore, Md.:
6 Gavarni drawings.
January 22 to March 6, 1949.
Walters Art Gallery, Baltimore, Md.:
5 miniatures.
January 27 to March 13, 1949.
City Art Museum, St. Louis, Mo.:
17 prints.
March 1949.
Institute of Contemporary Arts, Washington, D. C.:
11 Klee prints.
March 21 to April 22, 1949.
Philadelphia Museum of Art, Philadelphia, Pa.:
3 Lehmbruck prints.
May 1949.
Art Gallery of Toronto, Toronto, Canada:
67 prints.
May 1949.

Index of American Design.—During the fiscal year 1949 exhibitions from this collection were shown at the following places:

Library of Congress, Washington, D. C.
Western Reserve Historical Society, Cleveland, Ohio.
Shaker Village Work Camp, Pittsfield, Mass.
New York State Historical Association, Cooperstown, N. Y.
Damariscotta Information Bureau, Damariscotta, Maine.
University of Tennessee, Knoxville, Tenn.
Wustum Museum of Fine Arts, Racine, Wis.
City Art Museum, St. Louis, Mo.
William Rockhill Nelson Gallery, Kansas City, Mo.
Munson-Williams-Proctor Institute, Utica, N. Y.
Toledo Museum of Art, Toledo, Ohio.
Mint Museum, Charlotte, N. C.
Museum of Fine Arts, Montgomery, Ala.
Schenectady Museum, Schenectady, N. Y.
University of Oklahoma, Norman, Okla.
University of Michigan, Ann Arbor, Mich.
North Carolina College, Durham, N. C.
Art Institute, Zanesville, Ohio.
Atlanta University, Atlanta, Ga.
Currier Gallery of Art, Manchester, N. H.
Stephens College, Columbia, Mo.
Brown University, Providence, R. I.
Fort Valley State College, Fort Valley, Ga.
Washington College, Chestertown, Md.
Everhart Museum, Scranton, Pa.
Art Gallery, Grand Rapids, Mich.
Florida Agricultural and Mechanical College, Tallahassee, Fla.
Farnsworth Museum, Rockland, Maine.
Tuskegee Institute, Tuskegee, Ala.
Young Playways, Inc., Washington, D. C.
Smith College, Northampton, Mass.
Prairie View University, Prairie View, Tex.
University of North Dakota, Grand Forks, N. Dak.
American University, Washington, D. C.
Rockford Art Association, Rockford, Ill.
Sweet Briar College, Sweet Briar, Va.
Arkansas Agricultural, Mechanical and Normal College, Pine Bluff, Ark.
Alfred University, Alfred, N. Y.
Fisk University, Nashville, Tenn.
St. Paul Public Library, St. Paul, Minn.
Spelman College, Atlanta, Ga.
Arnot Art Gallery, Elmira, N. Y.
Kenneth Taylor Galleries, Nantucket, Mass.

CURATORIAL ACTIVITIES

The Curatorial Department accessioned 1,118 new gifts to the Gallery during the fiscal year. Advice was given in the case of 233 works of art brought to the Gallery for opinion, and 58 visits were made by members of the staff in connection with proffered works of art. Almost 1,000 research problems requiring reports were investigated in response to inquiries received by the Gallery. During the year, 16 individual lectures were given by members of the curatorial staff, both at the Gallery and elsewhere. In addition Miss Elizabeth Mongan gave a seminar at Alverthorpe, Jenkintown, Pa., for Swarth-

more College honor students; Charles Seymour, Jr., gave a course at Johns Hopkins University on Renaissance Art; and Charles M. Richards gave a survey course on art history under the auspices of the Department of Agriculture. Miss Mongan also made the arrangements for Arthur M. Hind's American lecture tour, in connection with the publication of Part II of his "Early Italian Engraving," under Gallery auspices. Mr. Seymour served on three and Miss Mongan on two art juries.

Special installations were prepared for: the Michelangelo "David" lent to the National Gallery of Art through the courtesy of the Italian Government; 28 pieces of Egyptian sculpture lent to the Gallery by C. S. Gulbenkian placed on exhibition in January 1949; and eighteenth-century furniture and books also lent by Mr. Gulbenkian. The cataloging and filing of photographs in the George Martin Richter Archive continued to make progress, with the gradual enlargement of the collection.

Further activities of the department are indicated under the heading of "Publications."

RESTORATION AND REPAIR OF WORKS OF ART

Necessary restoration and repair of works of art in the Gallery's collections were made by Stephen S. Pichetto, Consultant Restorer to the Gallery, until his death in January 1949. No successor to Mr. Pichetto has as yet been appointed, but necessary minor repairs on the works of art have been continued under the care of Mr. Pichetto's residual staff. All work was completed in the Restorer's studio in the Gallery, with the exception of the restoration of two paintings, work on which is being completed in the New York studio of S. S. Pichetto, Inc.

PUBLICATIONS

During the year Mr. Cairns published two books, "The Limits of Art," Pantheon Books, Inc., and "Legal Philosophy from Plato to Hegel," Johns Hopkins Press. He also edited a volume entitled "Lectures in Criticism," Pantheon Books, Inc., and contributed an introduction to "Epicurus, My Master," by Max Radin, University of North Carolina Press. He also contributed articles and reviews to the Columbia Law Review, Human Events, Saturday Review of Literature, New York Herald Tribune, Baltimore Evening Sun, Law and Contemporary Problems, The Scientific Monthly, and to the volume El Actual Pensamiento Juridico de los Estados Unidos, Buenos Aires.

A series of 12 articles on masterpieces in the Gallery, prefaced by one entitled "New Friends for Old Masters," is being published by John Walker in the Ladies Home Journal. An article by Mr.

Walker, "The Art of Duplicating Great Art," appeared in Vogue on August 15, 1948, and another, "American Masters in the National Gallery," in the National Geographic Magazine in September 1948. Mr. Walker also contributed two book reviews, the first reviewing Bernard Berenson's "Aesthetics and History in the Visual Arts" to the October 1948 Gazette des Beaux-Arts, and the second, entitled "The Philosophy of a Connoisseur," a review of Mr. Berenson's "Sketch for a Self-Portrait," to the New York Times for April 24, 1949. Charles Seymour, Jr., published two articles, "Note on the Relationship between an Illustration by Travies de Villers and Daumier's 'Le Fardeau'," in the Journal of the Walters Gallery for 1948, and in the Summer Bulletin of the Columbus Gallery of Fine Arts the text of the address given by him for the inauguration of a group of sculpture by Georg Ehrlich in the Columbus Gallery of Fine Arts. Printing of "Masterpieces of Sculpture from the National Gallery of Art," a volume prepared by Mr. Seymour, was begun during the summer of 1949. Mrs. Fern R. Shapley has written two book reviews, a review of Bernard Berenson's "Aesthetics and History" which is to be published in the next number of the College Art Journal, and one on Evelyn Sandberg-Vavala's "Uffizi Studies" published in the January 1949 Gazette des Beaux-Arts. Miss Elizabeth Mongan contributed six articles for the volume honoring Paul Sachs; an article for the Color Print Society on "Rockport," a colored lithograph by Stella Drabkin; descriptions of 27 illuminated miniatures to Professor Faye for the second edition of Seymour de Ricci's "Census of Manuscripts in America." An article on Rowlandson by David Keppel was published in the winter, 1949, number of The Art Quarterly. An article by James W. Lane entitled "Religious Art Exhibit" appeared in the Interracial Review, and one on "Contemporary Religious Sculpture Exhibition" in the Catholic University Bulletin; he contributed two book reviews on "Van Eyck's the Holy Lamb," by Leo Van Puyvelde, and "Robert Louis Stevenson," by David Daiches, to the Catholic World, and one on "American Landscape Painting," by Wolfgang Born, to the Magazine of Art. Charles M. Richards wrote a report on a code for intermuseum loans for the American Association of Museums.

An illustrated catalog of the Gulbenkian Egyptian sculpture was issued for the opening of the exhibition, and Mr. Seymour prepared a pamphlet on the Michelangelo "David," which was placed on sale during its exhibition. The book of illustrations of the Mellon Collection went to press in the late spring of 1949; work on the new National Gallery of Art catalog is at an advanced stage.

The Publications Fund during the past fiscal year has continued to add new subjects to the supply of inexpensive color reproductions

offered to the public, including 11″ x 14″ color prints and color post cards. Five large collotype reproductions supplemented the already long list of subjects available. A silk-screen print of an anonymous fifteenth-century colored woodcut from the Rosenwald Collection was also published.

The Gallery is continuing to meet the demand for illustrated catalogs of its various collections. The Mellon catalog is in process of publication, a third printing of the Kress catalog ordered, and a fifth edition of the Chester Dale catalog was published during the year.

Two new publications were issued this year: an "Arts and Crafts Bibliography," by Erwin O. Christensen, and a catalog of the "Egyptian Sculpture from the Gulbenkian Collection." A group of engraved Christmas cards was added to the usual series of color and Rosenwald subjects.

Final negotiations have been made for the printing in gravure of the book, "Masterpieces of Sculpture from the National Gallery of Art," and it will be available by October 1949; the publisher now has the final manuscript for "Made in America," by Mr. Christensen; the Gallery received a stock of "Popular Art in the United States," also by Mr. Christensen, which will go on sale on July 4, 1949; and "Pictures from America," by John Walker, will shortly be published.

EDUCATIONAL PROGRAM

During the year approximately 15,000 persons attended the General, Congressional, and Special Topic Tours, while over 20,000 attended the Picture of the Week. More than 18,000 came to hear the lectures and other programs in the auditorium. At least two-thirds of this lecture audience were regular attendants at these Sunday afternoon lectures. Many of them brought out-of-town visitors, and stated that this lecture series was becoming one of the Capital's chief Sunday attractions. The motion picture, "The National Gallery of Art," continues to be popular with clubs, educational organizations, and similar groups. During the past 12 months, 19 persons borrowed this film.

The publication of the monthly Calendar of Events, announcing Gallery activities, including notices of exhibitions, lectures, Gallery talks, tours, and concerts was continued during the year by the Educational Department. About 3,900 of the Calendar of Events are mailed each month.

LIBRARY

A total of 283 books, 221 pamphlets, and 31 periodicals were given to the Gallery; 494 books, 18 pamphlets, and 282 periodicals were purchased, and 40 subscriptions to periodicals were purchased. Exchanges with other institutions included 47 books, 114 pamphlets,

13 periodicals, and 420 bulletins. Of the 1,762 books borrowed and returned during the year, the Library of Congress lent 1,676 books to the Gallery on the usual interlibrary loan basis, and the remaining 86 books were borrowed from 25 public and university libraries.

INDEX OF AMERICAN DESIGN

During the year the Index of American Design continued to expand as the result of gifts and exchanges. Three hundred and thirty-six persons studied Index material at the Gallery; of this number, 301 were new users and 25 revisited the collection for study purposes. The use of photographs of Index drawings was increased by about 40 percent, with 1,796 photographs being sent out on loan, exchange, or purchase. Fifty exhibitions of original water-color renderings were circulated in 25 States.

PRESIDENT TRUMAN'S INAUGURAL RECEPTION

On January 20, 1949, the President's Inaugural Reception was held in the National Gallery of Art. The Seventh Street ground floor and main floor lobbies were especially furnished and decorated for the occasion; the rotunda and the two garden courts were appropriately decorated with flowers; under arrangements made by the White House staff, a platform was built in the West Sculpture Hall where the President addressed the guests who could not be received personally in the West Garden Court. Three sections of the Marine Band Orchestra played during the reception. The total number of guests was approximately 8,000.

CUSTODY OF GERMAN PAINTINGS

On April 6, 1949, the Gallery accepted custody of the 97 paintings from Berlin museums which had been on an exhibition tour of the United States, part of the group of 202 German paintings stored in the Gallery building by the Department of the Army from December 1945 to March 1948. After the last exhibition of this collection of paintings in Toledo, Ohio, the collection was brought to Washington and stored in the Gallery for about 2 weeks pending final shipping arrangements. On April 20, 1949, the collection was delivered to the Army for return to the American Zone in Germany.

The exhibition of the Berlin paintings in 13 museums throughout the United States resulted in the collection of $303,605.35 through admission fees and voluntary contributions for the relief of German children in the American Zone in Germany. These funds were deposited with the Gallery and were later disbursed in accordance with instructions received from the Department of the Army. During the tour 1,307,001 persons viewed the paintings, in addition to 964,970

who saw them during the time the paintings were on exhibition at the National Gallery of Art in Washington.

CUSTODY OF GERMAN SILVER

On January 7, 1949, the Gallery returned to the Department of the Army for transport to Germany the 44 sealed cases containing silverware and glassware and belonging to the Hohenzollern family. The cases had been stored in the Gallery since April 11, 1947.

CUSTODY OF WHITE HOUSE FURNITURE

On November 24, 1948, the Gallery accepted custody of certain items of paintings, sculpture, and furniture belonging to the White House for storage in the building until the repairs to the White House are completed.

Shipments of these items started on December 3, 1948, and continued for several days thereafter. At the present time there are 76 works of art—paintings and sculpture—stored in the Gallery's storage rooms and 25 vanloads of furniture stored in the packing space on the main floor.

The necessary arrangements for fire prevention, inspection, and fumigation have been established and are being carried out.

NEW CONSTRUCTION

During the past fiscal year, the Committee on the Building approved the construction in the southwest moat of a small workroom for the use of the gardening staff in maintaining and growing certain plants for the garden courts and landscaping. Later, when funds become available, it is planned to construct two small greenhouses adjacent to this workroom.

The growth of the Gallery's collections of works of art has been so rapid that all available exhibition space is now being utilized. As a matter of fact there are already several paintings which cannot be exhibited because there is no space in the present galleries. For this reason the Committee on the Building recommended that, to take care of the most urgent needs, the unfinished spaces 61–66 and 68–70, on the main floor, be completed as soon as funds are available. These galleries will be used for new acquisitions of paintings in the American and British schools and will also make possible some rearrangement in galleries already finished so as to make available additional space therein.

The Committee on the Building also recommended that the so-called copyists' room be finished to furnish office space for the Educational Department, which is now operating in rather cramped quarters.

Funds have been generously made available from private sources to complete this work, and contracts have been entered into with Eggers

and Higgins, Architects, and Vermilya-Brown Company, General Contractors, for the completion of 12 galleries in these unfinished areas. The floor plan has been approved, and bids are now being taken from subcontractors. It is anticipated that actual construction will begin in August 1949 and that the work will be completed by May 1950.

CARE AND MAINTENANCE OF THE BUILDING

The usual routine work in connection with the care and maintenance of the building and its mechanical equipment was carried on throughout the year.

The three older refrigeration compressors were completely dismantled and overhauled, including the purge compressors. Three chilled-water pumps, including the electric motors, were completely overhauled and realigned by the mechanical staff. Twelve supply fans were cleaned and repainted to protect them against corrosion. The structural steel base for the large 400-horsepower motor driving No. 2 Worthington refrigeration machine was strengthened in order that this large motor would remain in alignment. To correct serious leaks in two of these machines, the technical staff successfully made and installed the necessary parts.

The cornice metal lining at the top of the exterior wall of the building developed leaks, and approximately 50 percent of the joints in the metal lining were cleaned and soldered.

In connection with the Inaugural Reception, the technical staff installed floodlights on three sides of the building, assisted the personnel of the U. S. Army Signal Corps in the installation of a loud-speaker system on the main floor, and installed extra electric lines and water lines for the use of the caterer. The maintenance staff erected extensive checking facilities for the proper care of wraps.

Twelve new display cases were constructed by the staff for the Gulbenkian Exhibition.

Care and improvement of the Gallery grounds and other miscellaneous work progressed satisfactorily. Potted plants, totaling 2,366, which were used for decoration in the two garden courts, were grown in the southwest moat. In addition, over 350 large pots of chrysanthemums were also grown in this moat area, and these plants provided the decoration for the two garden courts during the months of October and November.

COMMITTEE OF EXPERT EXAMINERS

During the year the United States Civil Service Commission's Committee of Expert Examiners, composed of staff members of the Gallery, aided in the drafting of standards for Civil Service positions in which a knowledge of the history of art is a basic requirement. The

Committee also performed preliminary work in the preparation of the examination announcement for art positions which was distributed by the Civil Service Commission with a closing date of April 19, 1949. From this examination registers of eligibles will be established for appointment to art positions in the Gallery and elsewhere in the Government. This will give the present incumbents, most of whom are serving indefinite war-time appointments, an opportunity to attain permanent status, and will also make available a greater number of qualified candidates.

OTHER ACTIVITIES

Forty-six Sunday evening concerts were given during the fiscal year, all concerts being held in the East Garden Court. A Mozart Festival of six concerts was given in the autumn with the highest attendance rate for the season. The five Sunday evenings in May were devoted to the Gallery's annual American Music Festival. An estimated 50,000 persons attended these concerts.

During the year the photographic laboratory of the Gallery made 17,709 prints, 1,342 black-and-white slides, 1,005 color slides, 3,873 negatives, in addition to infrared photographs, ultraviolet photographs, X-rays, and color separation negatives.

A total of 3,500 copies of press releases, 128 special permits to copy paintings in the National Gallery of Art, and 117 special permits to photograph in the Gallery were issued during the year.

OTHER GIFTS

Gifts of books on art and related material were made to the Gallery library during the year by Paul Mellon and others. Gifts of money during the fiscal year 1949 were made by the Avalon Foundation and The A. W. Mellon Educational and Charitable Trust, and a cash bequest was received from the Estate of the late William Nelson Cromwell.

AUDIT OF PRIVATE FUNDS OF THE GALLERY

An audit of the private funds of the Gallery has been made for the fiscal year ended June 30, 1949, by Price Waterhouse & Co., public accountants, and the certificate of that company on its examination of the accounting records maintained for such funds will be forwarded to the Gallery.

Respectfully submitted.

HUNTINGTON CAIRNS, *Secretary.*

THE SECRETARY,
Smithsonian Institution.

APPENDIX 3

REPORT ON THE NATIONAL COLLECTION OF FINE ARTS

SIR: I have the honor to submit the following report on the activities of the National Collection of Fine Arts for the fiscal year ended June 30, 1949.

THE SMITHSONIAN ART COMMISSION

The twenty-sixth annual meeting of the Smithsonian Art Commission was held in the Regents' Room of the Smithsonian Building, on Tuesday, December 7, 1948.

The members present were: Paul Manship, chairman; Alexander Wetmore, secretary (member, ex officio); George Hewitt Myers; George H. Edgell; Lloyd Goodrich; John Taylor Arms; Archibald G. Wenley, Gifford Beal, and Robert Woods Bliss. Thomas M. Beggs, Director of the National Collection of Fine Arts, and John E. Graf, Assistant Secretary of the Smithsonian Institution, were also present.

The Commission recommended the reelection of Archibald G. Wenley, David E. Finley, Eugene E. Speicher, and Paul Manship for the usual 4-year period.

The following officers were reelected for the ensuing year: Paul Manship, chairman; Robert Woods Bliss, vice chairman; and Dr. Alexander Wetmore, secretary.

The following were reelected members of the executive committee for the ensuing year: David E. Finley, chairman, Robert Woods Bliss, and Gilmore D. Clarke. Paul Manship, as chairman of the Commission, and Dr. Alexander Wetmore, as secretary of the Commission, are ex officio members of the executive committee.

The Secretary summarized the status of exhibition and storage of the art objects of the National Collection of Fine Arts which at present are housed in space intended for the natural history collections in the Natural History Building. A separate building for the art collections is included in the Smithsonian building program, but funds for the development of plans have not been made available.

The following resolution, offered by Mr. Goodrich, was passed unanimously:

Resolved, That whereas the art collections in the custody of the National Collection of Fine Arts are exhibited in an entirely inadequate manner, the Smithsonian Art Commission recommends that the Secretary of the Smithsonian Institution

take all action necessary to provide space and facilities necessary to the preservation and proper exhibition of these art collections to the public.

The formal meeting was adjourned at 11:45 at which time the members assembled in the main hall of the Smithsonian Building to pass on the works of art which had been offered during the year. The following action was taken:

Accepted for the National Collection of Fine Arts

Miniature, water color on ivory, Robert Broome, by an unknown artist, and a shell cameo. Gifts of Miss Helen Munroe.

Painting, Tiger and Cub, ink and water color on paper, and scroll, ink on paper, by Mr. Whang, Jang Har. Gifts of the artist as a token of friendship and gratitude to the American people from the people of Korea through the Korean Commission in Washington.

Miniature, water color on ivory, My Uncle Charles, by Albert Colfs. Gift of the artist.

Oil, Portrait Group (Benjamin West, Frank W. and Henry T. C. Wilkin), by Frank W. Wilkin (1791–1842). Gift of Mrs. Mabel Wiles.

Oil, Thomas Moran, by Howard Russell Butler, N. A. (1856–1934). Bequest of Miss Ruth Moran. A signed palette and brushes used by Thomas Moran, and a photogravure of the artist, were included in the bequest.

Oil, A Reading, by Thomas W. Dewing, N. A. (1851–1938). Henry Ward Ranger bequest.

Oil, Margery and Little Edmund, by Edmund C. Tarbell, N. A. (1862–1938). Henry Ward Ranger bequest.

Accepted for the National Portrait Gallery

Oil, George Washington Carver, by Betsy Graves Reyneau. Gift of the George Washington Carver Memorial Committee.

Accepted for the Smithsonian Institution

Water color on silk, Tiger, by Ih Dang (Mr. Kim, Eun Ho). Gift of the artist through John R. Hodge, Lieutenant General, United States Army.

Oils, 44 portraits of World War II heroes, by Joseph Cummings Chase. Gift of the artist. Assigned to the Department of History February 17, 1949.

DEPOSITS

Oil, Portrait of Spencer Fullerton Baird, the second Secretary of the Smithsonian Institution, by Henry Ulke (1821–1910). Purchased by the Smithsonian Institution and deposited August 6, 1948.

Bronze, African Elephant Scenting Danger, by Eli Harvey. Accepted as a gift of the sculptor and deposited by the Smithsonian Institution December 9, 1948.

THE CATHERINE WALDEN MYER FUND

Two miniatures, water color on ivory, were acquired from the fund established through the bequest of the late Catherine Walden Myer, as follows:

68. Henry A. Coit, by John Wood Dodge (1807–1893); from Edmund Bury, Philadelphia, Pa.

69. Ebenezer Martin of Martin's Ferry, Ohio, attributed to Henry Inman (1801–1846); from Miss Alice L. Wood, Blowing Rock, N. C.

LOANS ACCEPTED

Three Nymphenburg figurines were lent by Miss Cornelia Morrison, Newton, N. C., on February 7, 1949.

One miniature, water color on ivory, Portrait of Elsie Clough Street, by Gerald S. Haywood, was lent by Mrs. James Walter Rickey on February 15, 1949.

One oil painting, Portrait of Sr. Benito Juarez, by Tom Lea, was lent by the State Department on February 18, 1949.

Two oil paintings, Portrait of the Hon. Grizel Ross, by William Hogarth, and Portrait of Gen. Sir Charles Ross, by George Romney, and one miniature, water color on ivory, Portrait of the 8th Baronet Sir Charles Ross, by E. C. Thomson, were lent by Lady Ross of Balnagown Castle, Ross-shire, Scotland, on April 4, 1949.

WITHDRAWALS BY OWNERS

A bronze bust of Abraham Lincoln, by Augustus Saint-Gaudens, lent by Mrs. Augustus Saint-Gaudens in 1912, was withdrawn August 24, 1948, at the request of Homer Saint-Gaudens.

Two oil paintings, Shoshone Falls, Idaho, and Spectres of the North, by Thomas Moran, lent by Miss Ruth B. Moran in 1923, were withdrawn October 6, 1948, by the executor of Miss Moran's estate.

An oil painting, The Nativity, by an unknown artist, lent by St. Paul's Church in 1945, was withdrawn February 9, 1949, by the owner.

Nine miniatures painted by Mrs. E. D. Sparrow when she was Mary Hall, lent by the artist in 1929, were withdrawn April 25, 1949.

LOANS TO OTHER MUSEUMS AND ORGANIZATIONS

The original design for the painting in the Capitol Building, Westward the Course of Empire Takes Its Way, by Emanuel Leutze, was lent to the Akron Art Institute August 17, 1948, to be included in the Freedom Train Exhibition at Akron, Ohio. (Returned October 5, 1948.)

An oil painting, Portrait of Admiral William Snowden Sims, by Irving Wiles, was lent to the Metropolitan Museum of Art for an exhibition held in conjunction with the United States Navy, entitled "Your Navy, Its Contribution to America from Colonial Days to World Leadership," held from October 25 through December 5, 1948. (Returned January 13, 1949.)

An oil painting, Sunset, Navarro Ridge, California Coast, by Ralph Blakelock, was lent to The Brooklyn Museum, Brooklyn, N. Y., for an exhibition "The Coast and the Sea, A Survey of American Marine

Painting," held from November 19, 1948, to January 16, 1949. (Returned February 3, 1949.)

Two oil paintings, Portrait of George Washington, attributed to William Winstanley, after Gilbert Stuart, and The Signing of the Treaty of Ghent, Christmas Eve, 1814, by Sir Amèdée Forestier, were lent March 22, 1949, to the Department of State to be hung in the office of the Secretary of State.

An oil painting, Portrait of Andrew Jackson, by Rembrandt Peale, was lent to the Committee on Un-American Activities March 25, 1949, to be hung in its committee room for an indefinite period.

THE HENRY WARD RANGER FUND

Since it is a provision of the Ranger bequest that the paintings purchased by the Council of the National Academy of Design from the fund provided by the Henry Ward Ranger bequest, and assigned to American art institutions, may be claimed by the National Collection of Fine Arts during the 5-year period beginning 10 years after the death of the artist represented, seven paintings were recalled for action of the Smithsonian Art Commission at its meeting December 7, 1948.

Two paintings, listed earlier in this report, were accepted by the Commission to become permanent accessions.

The following five paintings were returned to the institutions to which they were originally assigned, or reassigned, by the National Academy of Design as indicated.

No. 3. Grey Day, by W. Granville-Smith, N. A. (1870–1938), assigned to the National Gallery of Art (now National Collection of Fine Arts).

No. 48. The Prodigal Son, by Horatio N. Walker, N. A. (1858–1938), assigned to the Albright Art Gallery, Buffalo Fine Arts Academy, Delaware Park, Buffalo, N. Y.

No. 56. Southaven Mill, by W. Granville-Smith, N. A., assigned to the Toledo Museum of Art, Toledo, Ohio.

No. 63. Cypripedia, by Sergeant Kendall, N. A. (1869–1938), assigned to the California Palace of the Legion of Honor, San Francisco, Calif.

No. 90. Summer, by W. L. Lathrop, N. A. (1859–1938), reassigned by the National Academy of Design to the Mary Washington College, University of Virginia, Fredericksburg, Va.

The following paintings, purchased by the Council of the National Academy of Design in 1948, were assigned as follows:

No. 120. Sunlight on the Waterfront, by Ferdinand E. Warren, N. A. (1899–), to the Currier Gallery of Art, Manchester, N. H., May 13, 1949.

No. 121. Village Green, by John Pike, N. A. (1911–), to the Washington State Historical Society, Tacoma, Wash., March 15, 1949.

No. 124. Lobstermen, by Andrew Winter, N. A. (1893–), to the Mint Museum of Art, Inc., Charlotte, N. C., June 1, 1949.

THE NATIONAL COLLECTION OF FINE ARTS REFERENCE LIBRARY

A total of 347 publications (219 volumes and 128 pamphlets) were accessioned, bringing the total National Collection of Fine Arts library accessions to 11,364.

The most noteworthy gift this year was that of the Ferdinand Perret Research Library of the Arts and their Affiliated Sciences, from Ferdinand Perret of Los Angeles, Calif. This library, a series of uniform portfolios, containing mounted reproductions of paintings and art objects, represents many years of work on the part of Mr. Perret. The volumes on painters and sculptors are arranged by schools and alphabetically according to the names of the artists.

PRESERVATION

In addition to much necessary repair and renovation to the permanent collections, portraits were cleaned, restored, and revarnished for the following departments: State Department—Secretaries of State John Hay and Elihu Root, by unknown artists. Marine Corps, Department of the Navy—Generals Franklin Wharton and George Barnett, by L. H. Gebhard; George Elliott, by Richard N. Brooke; John A. Lejeune, by S. B. Baker; Archibald Henderson, by R. Le Grande Johnston, and John H. Russell, by Bjorn Egeli. United States Air Force—a minor correction was made to the uniform in the portrait of Brig. Gen. R. E. Ramey.

The portrait of Alvin C. York, by Joseph Cummings Chase, was cleaned for the Department of History, United States National Museum.

INFORMATION SERVICE

The requests for information of 1,422 visitors received special attention, as did many similar requests by mail and phone; 332 art works were submitted for identification.

The Director and Mr. Gardner, curator of ceramics, gave lectures on art topics during the year to a number of groups, including the District of Columbia Chapter of the American Association of University Women, the art section of the Twentieth Century Club, a group of art students from the Washington Missionary College, Takoma Park, Md., the American Association of Music and Fine Arts, and the District Chapter of the National League of American Pen Women. They also served as judges or as members of juries of selection and award for a number of exhibitions held in Washington.

Permission was given to four persons to copy art works in the collection.

SPECIAL EXHIBITIONS

In addition to the regularly scheduled temporary exhibitions listed below, the Community Chests of America and the Louisiana State Society of Washington held special showings of paintings of timely interest in the lobby of the Natural History Building for short periods. The Federal Security Agency was assisted in a Memorial Day exhibition of paintings by Leslie E. Lane under the sponsorship of the American Legion.

August 7 through 29, 1948.—Exhibition of 94 portraits of Soldiers of Two World Wars, by Joseph Cummings Chase.

November 7 through 28, 1948.—The Eleventh Metropolitan State Art Contest, held under the auspices of the District of Columbia Chapter, American Artist's Professional League assisted by the Entre Nous Club, consisting of 327 specimens of paintings, sculpture, prints, ceramics, and metalcraft. A catalog was privately printed.

January 12 through 30, 1949.—Exhibition of Polish Manual Arts, held under the patronage of His Excellency Jozef Winiewicz, Ambassador of Poland to the United States, and the auspices of The American Federation of Arts, consisting of 131 pieces of tapestries, paintings on glass, and folk sculpture. A catalog was privately printed.

February 6 through 27, 1949.—The Sixteenth Annual Exhibition of The Miniature Painters, Sculptors and Gravers Society of Washington, D. C., consisting of 155 examples. A catalog was privately printed.

April 7 through 27, 1949.—The Twenty-fifth Annual Hoosier Salon held under the sponsorship of the Indiana State Society of Washington, consisting of 196 paintings, prints, and sculpture. A catalog was privately printed.

May 8 through 30, 1949.—The Fifty-third Annual Exhibition of the Washington Water Color Club, consisting of 135 paintings and prints. A catalog was privately printed.

Respectfully submitted.

THOMAS M. BEGGS, *Director.*

Dr. A. WETMORE,
Secretary, Smithsonian Institution.

APPENDIX 4

REPORT ON THE FREER GALLERY OF ART

SIR: I have the honor to submit the twenty-ninth annual report on the Freer Gallery of Art for the year ended June 30, 1949.

THE COLLECTIONS

Additions to the collections by purchase were as follows:

BRONZE

48.24. Chinese, Chou dynasty (1122–256 B. C., late). A quadruped; linear designs in countersunk relief; smooth gray-green patina with encrustations of green; cracked in places, forelegs repaired. 0.118 x 0.204.

48.25. Chinese, Chou dynasty (1122–256 B. C., late). A garment hook inlaid with silver and gold. 0.227 x 0.025.

48.26. Chinese, Chou dynasty (1122–256 B. C., late). A garment hook inlaid with turquoise and gold; underside plated with silver. 0.212 x 0.017.

49.4. Chinese, Northern Wei dynasty (A. D. 386–535). A figure standing on a lotus pedestal in a six-lobed dish; silvery-gray patina encrusted with malachite, azurite, and dirt adhesions; dish supported on three lugs. 0.243 x 0.215.

49.5. Chinese, Shang dynasty (1766–1122 B. C., late). A covered ceremonial vessel of the type *hu* decorated with casting in relief; smooth gray-green patina. (Illustrated.) 0.176 x 0.115.

49.6. Chinese, Chou dynasty (1122–256 B. C., late). A garment hook with interlaced dragon design inlaid in gold on background of silver dots. 0.123 x 0.060.

GLASS

48.14. Syrian (late 13th century). A beaker with fluted body and flaring lip; honey-colored glass decorated with colored enamels and gold. 0.295 x 0.172.

GOLD

48.25. Syrian or Egyptian (10th–11th century). A hinged armlet of hollow gold decorated with fine filigree work, *kūfic* inscriptions, and settings for five stones (now missing). Width: 0.129.

JADE

48.12. Chinese, Chou dynasty (1122–256 B. C., late). A flat ring of the type *yüan* carved with small whorl marks in low relief; pale greenish-gray nephrite, partly deteriorated. Diameter: 0.123.

48.13. Chinese, Chou dynasty (1122–256 B. C., late). A garment hook decorated with incised linear patterns and carving in low relief; hook in form of animal head repaired; pale nephrite almost all deteriorated to cream color. 0.131 x 0.008.

LACQUER

49.1. Chinese, Chou dynasty (1122–256 B. C., late). A shallow, oval ceremonial cup on a stand, wood covered with black lacquer with red designs outside; black on red inside. 0.235 x 0.179.

MANUSCRIPT

48.9. Arabic, Egypt (14th–15th century). A leaf from a Koran; recto: illuminated with gold on blue and gold grounds, three white *kūfic* inscriptions; verso: text in black *naskhī* in a decorative border. 0.332 x 0.245.

49.2. Persian (16th century). A text of the *Gulistān* by Sa'dī written by Rajab b. Khair al-din . . . 153 folios, illuminated *sarlawḥ*, two Turkish miniatures; text in black *nasta'līq* with captions in blue, red, and gold; contemporary binding, new back and edges. 0.191 x 0.118.

49.3. Persian (15th century). A text of Mihr and Mushtarī by 'Aṣṣār written by Shaikh Murshid al-Kātib in Shīrāz, A. H. 882 (A. D. 1477); 223 folios, illuminated *'unvān*, three miniatures; text in black *nasta'līq*, chapter headings in gold on decorated ground; contemporary binding. 0.201 x 0.122.

MARBLE

48.23. Chinese, Shang dynasty (1766–1122 B. C., late). An ornamental carving in high and low relief; slightly decomposed. 0.085 x 0.050.

PAINTING

48.8. Indian, Akbar period (1556–1605), Mughal. Noah's Ark; painted in colors and gold. 0.281 x 0.156.

48.10. Chinese, Sung dynasty (960–1279, early). Portrait of Wang Huan; ink and color on silk; one inscription and two seals on painting. 0.393 x 0.317.

48.11. Chinese, Sung dynasty (960–1279, early). Portrait of Fêng P'ing; ink and color on silk; one inscription and three seals on painting. (Illustrated.) 0.399 x 0.327.

48.15. Persian, Īl-Khān period (14th century). Mongol. "Gushtāsp killing the Dragon"; painted in colors and gold on paper; proto-*nasta'līq* script, black for text and black and red for captions, fills upper three-quarters of page. 0.368 x 0.300.

48.17. Turkish (mid-16th century). Chinoiserie: a lion, a *ch'i-lin* and a dragon amid floral sprays; ink, gold and slight color on paper. 0.175 x 0.285.

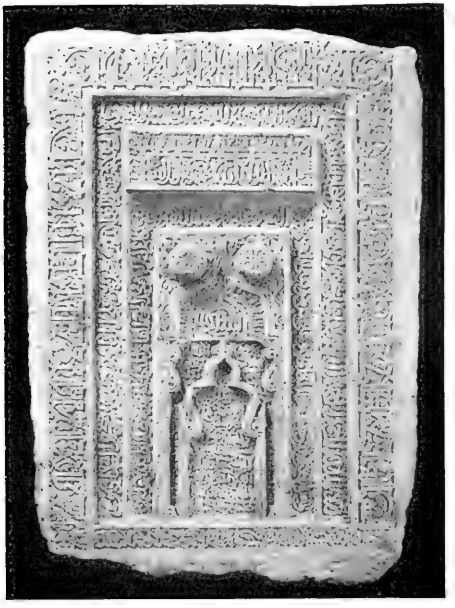
48.18. Persian, Timurid period (first half, 15th century), Shīrāz school. Timur's entry into Samarquand; leaf from a *Zafar-nāma* painted in colors and gold; text in black *naskhī*, title in red. 0.259 x 0.132.

48.19A. Indian (early 17th century) Mughal, school of Jahāngīr. A vulture, by Manṣūr, in colors on paper on the recto of a leaf from an imperial album; verses and signature in *nasta'līq* amid floral rinceaux, wide border of gold foliage. (Illustrated.) 0.163 x 0.102.

48.19B. Indian (early 17th century) Mughal, school of Jahāngīr. Jahāngīr standing on a globe shoots an arrow at the impaled head of his enemy Malik 'Anbar, by Abu'l-Ḥasan (Nādir al-zamān); verso of the above leaf from an imperial album; gold and colors on paper, *nasta'līq* script. 0.380 x 0.260.

48.20. Indian (early 17th century) Mughal, school of Jahāngīr. Portrait of I'timād al-dawla by Bālchand; ink and colors on paper; borders with

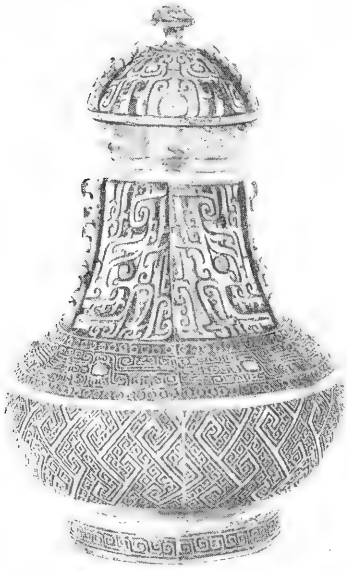
48.19A



48.16

RECENT ADDITIONS TO THE COLLECTION OF THE FREER GALLERY OF ART

48.11



49.5

verses in black *nasta'līq* and gold and polychrome floral designs; verso: poems and floral decoration. 0.381 x 0.259.

48.21. Indian (early 17th century), Mughal, school of Jahāngīr. A bee-eater, by Farrukh Beg, painted in colors on the verso of a leaf from an imperial album; verses in *nasta'līq* and decorative borders. On the recto of this leaf, a painting of the same period and school shows a bowman, musician, and dervish, by Bichitr, in gold and colors, also with verses in *nasta'līq* and decorative borders. 0.384 x 0.263.

48.22. Chinese, Ming dynasty (14th century). Landscape in the style of Wang Mêng (d. 1385); ink on gray paper; two inscriptions and eight seals on painting. 0.855 x 0.397.

48.28. Indian (early 17th century), Mughal, school of Jahāngīr. Portrait of Jahāngīr, by Abū'l-Ḥasan (Nādir al-zamān); in colors and gold on paper; signature and three inscriptions. 0.388 x 0.257.

STONE SCULPTURE

48.16. Persian (dated A. H. 549, A. D. 1154–1155). A building inscription by Aḥmad b. Muḥammad b. Aḥmad (Asīd or Usaid), carved in a slab of alabasterlike stone in the form of a *miḥrāb*; covered with *kūfī* and *naskhī* inscriptions. (Illustrated.) 0.925 x 0.676.

The work of the staff members has been devoted to the study of new accessions, of objects submitted for purchase, and to general research within the collections of Chinese, Japanese, Persian, Arabic, and Indian materials. Reports, oral or written, were made upon 2,563 objects and 372 photographs of objects submitted for examination; and 369 Oriental language inscriptions were translated. Docent service and other lectures given by staff members are listed below.

REPAIRS TO THE COLLECTIONS

A total of 27 objects were cleaned, resurfaced, remounted, or repaired as follows:

American paintings cleaned and resurfaced	14
Chinese paintings remounted	3
Chinese pottery repaired	2
Japanese paintings remounted	7
Japanese pottery repaired	1

The repair and restoration of the walls of the Peacock Room by James McNeill Whistler, mentioned in last year's report, were completed on September 27 and the room was reopened to the public on October 4. It was closed again the first of the year and on January 7, 1949, the work of repairing and restoring the ceiling was begun. This involves taking down the ceiling, lining each panel with canvas, treating it with moisture-proof wax, and mounting it on a heavy plywood backing. The painting on the wood is then cleaned with the utmost care, later repaint is removed, gilding and paint are renewed in areas from which they were gone altogether and the whole thing is resurfaced. The work is still in progress on a part-time basis by John

A. and Richard M. Finlayson of the Museum of Fine Arts, Boston, and the structural work is being done by the Gallery cabinet shop.

CHANGES IN EXHIBITIONS

Changes in exhibitions totaled 53, as follows:

American paintings	25
Peacock Room (temporarily closed)	1
Chinese gilt bronze	2
Chinese paintings	4
Chinese pottery	5
Japanese paintings	16

This unusually small number of exhibition changes is accounted for by the lack of a painter in the Gallery.

LIBRARY

During the year the following work was accomplished in the library:

Accessions, including books, pamphlets, charts, rubbings, and study photographs, 753; cataloging of all kinds, including cards typed and filed, 4,448; binding, repairing, and mounting, 693.

An inventory of the library holdings was completed, and statistics now show the number of books, pamphlets, and other items, rather than the number of titles. The periodicals, including museum publications, were inventoried, revised, and alphabetically shelved in the periodical room.

PUBLICATIONS

The following new edition of a former title was published: Annotated Outline of the History of Japanese Art, new issue, March 1949.

Occasional Papers, vol. 1, No. 2: Paintings, Pastels, Drawings, Prints, and Copper Plates by and Attributed to American and European Artists, together with a List of Original Whistleriana, in the Freer Gallery of Art, by Burns A. Stubbs, was published in August 1948.

REPRODUCTIONS

During the year the photographic laboratory made 4,332 prints, 713 glass negatives, 607 black-and-white slides and 269 color slides.

ATTENDANCE

The Gallery was open to the public from 9:00 to 4:30 every day except Christmas Day. The total number of visitors to come in the main entrance was 74,846. The weekday total was 59,595, and 15,096 visitors came on Sundays. The averages were: Weekdays, 198; Sundays, 290. The highest monthly attendance was in August with 8,300 and the lowest was in December with 2,622.

There were 1,724 visitors to the main office during the year; the purpose of their visits was as follows:

For general information	787
To see staff members	91
To read in the library	217
To make sketches and tracings from library books	9
To see buildings and installations	24
To make photographs in court and sketches in exhibition galleries	74
To examine, borrow, or purchase photographs and slides	333
To submit objects for examination	378
To see objects in storage	237
Washington Mss	29
Far Eastern paintings and textiles	48
Near Eastern paintings and manuscripts	21
Tibetan paintings	3
American paintings	20
Whistler prints	1
Oriental pottery, jade, bronze, lacquer, and bamboo	96
All sculpture	8
Syrian and other glass	11

SPECIAL VISITORS

Two scholars made extended study visits to the Gallery during the year, as follows:

Nov. 22, 1948–Jan. 26, 1949	Mr. Shih-hsiang Wang, Curator of Paintings in the Palace Museum in Peiping, studied the construction and operation of the building as a whole and made a detailed study of the collection of Chinese paintings.
Feb. 7–Mar. 4, 1949	Mr. Won-yong Kim, of the National Museum of Korea, studied the Gallery and the Far Eastern collections.

DOCENT SERVICE AND OTHER STAFF ACTIVITIES

By request 16 groups met in the exhibition galleries for instruction by staff members. Total attendance was 358.

On invitation the following lectures were given outside the Gallery by staff members:

1948

Oct. 20	Mr. Pope lectured at the Denver Art Museum, Denver, Colo., on (1) "Prehistoric Pottery and Unglazed Wares of Shang, Chou and Han." (Illustrated.) Attendance, 150.
Oct. 21	Mr. Pope lectured at Denver Art Museum, Denver, Colo., on (2) "Beginnings of Glaze and of Porcelain and their Development through the Ming Dynasty." (Illustrated.) Attendance, 150.

1948

Oct. 22—Mr. Pope lectured at Denver Art Museum, Denver, Colo., on (3) "The Development of European Interest in Chinese Porcelain and the Final Refinements of Manufacture at Ching-tê Chên in the Ch'ing Dynasty." (Illustrated.) Attendance, 150.

Oct. 27—Mr. Pope lectured at Nelson Gallery of Art, Kansas City, Mo., on No. 3 (See Oct. 22 above). (Illustrated.) Attendance, 110.

Oct. 28—Dr. Ettinghausen lectured before the Alexandria Woman's Club, Alexandria, Va., on "Culture of the Near East." (Illustrated.) Attendance, 80.

Oct. 30—Mr. Pope lectured at City Art Museum, St. Louis, Mo., on No. 3 (see Oct. 22 above). (Illustrated.) Attendance, 175.

Nov. 4—Mr. Pope lectured at Kellogg Auditorium, Ann Arbor, Mich., on No. 3 (see Oct. 22 above). (Illustrated.) Attendance, 175.

Nov. 29—Mr. Pope lectured at Bradford Junior College, Bradford, Mass., on "Introduction of Chinese Ceramics to Europe" to members of the faculty. (Illustrated.) Attendance, 25.

1949

Jan. 6—Dr. Ettinghausen lectured at Arts Club of Washington, Washington, D. C., on "Biblical Subjects Seen through Persian Eyes." (Illustrated.) Attendance, 80.

Jan. 27—Dr. Ettinghausen lectured at the Annual Meeting of the College Art Association, Oriental Section, in Baltimore, Md., on "A Near Eastern Motif in Far Eastern Garb." (Illustrated.) Attendance, 60.

Feb. 12—Mr. Acker lectured at the Zen Institute of America, 124 East 65th Street, New York, N. Y., on "The Hōryūji Wall Paintings Recently Destroyed by Fire." (Illustrated by slides belonging to the Institute.) Attendance, 30.

Feb. 14—Dr. Ettinghausen lectured at the Oriental Club of Princeton University, Princeton, N. J., on "Symbols and Religious Themes in Moslem Art." (Illustrated.) Attendance, 75.

1949

Apr. 6 — Mr. Pope lectured at the Annual Meeting of the Far Eastern Association (Section on China: Art and Archaeology) on "Technical Notes on Shang White Pottery." (Illustrated.) Attendance, 40.

Members of the staff traveled outside of Washington for professional purposes as follows:

1948

July 6–7 — Dr. Ettinghausen in Cincinnati, examined objects at Cincinnati Art Museum.

Aug. 25–30 — Mr. Stubbs in Chicago, attended convention of the Photographers Association of America.

1949

Jan. 19–23 — Mr. Pope in New York, examined objects belonging to museums and dealers.

Jan. 27 — Mr. Wenley, Mr. Pope, Dr. Ettinghausen, and Mr. Acker in Baltimore, attended the Oriental Section of the Annual Meeting of the College Art Association. Mr. Pope served as chairman of this section and Dr. Ettinghausen was among those reading papers.

Jan. 28 — Mr. Pope and Dr. Ettinghausen in Baltimore for second day of above meeting.

Feb. 13–18 — Mr. Wenley in New York, examined objects belonging to museums and dealers.

Feb. 15–19 — Dr. Ettinghausen in New York, examined objects belonging to museums and dealers.

Mar. 31–Apr. 1 — Mr. Wenley in Ann Arbor, conferred with officials of the University of Michigan in regard to cooperation with the University in its Oriental program.

Apr. 5–8 — Mr. Pope in New Haven, attended the joint Annual Meeting of the American Oriental Society and the Far Eastern Association; read a paper at one session of the FEA meeting. In Meriden, Conn., visited the Meriden Gravure Company to observe methods of collotype and offset printing. In New York, examined objects belonging to dealers.

May 20–21 — Mr. Pope in New York, attended preliminary dinner and organization meetings of the Far Eastern Ceramic Group and was elected first president of the Group. Examined objects belonging to museums, private collectors, and dealers.

June 20 — Dr. Ettinghausen in Ann Arbor, Mich., began teaching in University of Michigan summer session; one course on "Persian Art," one course on "Persian Painting."

HONORARY DUTIES

During the year, members of the staff undertook honorary duties outside the Institution as follows:

Mr. Wenley: Appointed to the committee of expert examiners for the Smithsonian Institution by the Civil Service Commission.

Appointed to serve on the nominating committee of the Far Eastern Association.

Appointed as Honorary Curator of Oriental Art, Department of Fine Arts, University of Michigan.

Appointed to serve as a member of the visiting committee of Dumbarton Oaks Research Library and Collection.

Mr. Pope: Elected President of the Far Eastern Ceramic Group.

Respectfully submitted.

A. G. WENLEY, *Director.*

Dr. A. WETMORE,
Secretary, Smithsonian Institution.

APPENDIX 5

REPORT ON THE BUREAU OF AMERICAN ETHNOLOGY

SIR: I have the honor to submit the following Report on the field researches, office work, and other operations of the Bureau of American Ethnology during the fiscal year ended June 30, 1949, conducted in accordance with the Act of Congress of June 27, 1944, which provides "* * * for continuing ethnological researches among the American Indians and the natives of Hawaii and the excavation and preservation of archeologic remains. * * *"

SYSTEMATIC RESEARCHES

At the end of December Dr. M. W. Stirling, Director of the Bureau, left to continue the cooperative program of archeological work in Panamá of the National Geographic Society and the Smithsonian Institution. Excavations were conducted at Utivé in the province of Panamá, at Barriles and Palo Santo in the province of Chiriquí, and at three sites midway between Santiago and Soná in the province of Veraguas. At Utivé and Barriles heretofore undescribed ceramic cultures were encountered, while at the other sites much new information was obtained on the classic Chiriquí and Veraguas cultures. The expedition received splendid cooperation from Maj. Gen. Willis Hale, commanding general of the air forces of the Caribbean area, who, in addition to other assistance, allowed the use of two helicopters for reconnaissance work in the Utivé-Chepo area. Dr. Stirling returned to Washington with the Panamanian collections in the middle of May.

Dr. Frank H. H. Roberts, Jr., Associate Director of the Bureau and Director of the River Basin Surveys, devoted the greater part of his time during the fiscal year to the direction and administration of the River Basin Surveys. On November 4 and 5, Dr. Roberts attended the meetings of the American Philosophical Society at Philadelphia where he presented a paper on the River Basin Surveys program. From November 22 to 30, Dr. Roberts was at Lincoln, Nebr., inspecting the field headquarters for the Missouri Basin project. While at Lincoln he also took part in the Sixth Conference for Plains Archeology and presided over one of the symposia. During the year he also served as a member of the executive committee for the Divi-

sion of Anthropology and Psychology, National Research Council. Dr. Roberts' report of the work of the River Basin Surveys during the fiscal year appears in another section of this report.

Dr. John P. Harrington, ethnologist, continued the revision of his grammar of the Maya language. Study of sources and the vast literature on the subject shows that there were 10 linguistic stocks in southern México and Central America that had Maya-style hieroglyphic writing. The work also included revision of a previous paper on Maya hieroglyphs.

A study incident to this Maya work was the determination of the origin of the word "Maya." This word appears first in the letter written by Bartholomew Columbus in 1506 telling of the fourth voyage of Columbus. The letter employs the spelling "Mayam" which is clearly derived from the native Maya name for Yucatán, Mayab.

During the winter a paper was prepared on the names "Tiwa" and "Tewa," designations of two languages in New Mexico. Early in the spring Dr. Harrington prepared a series of six maps of America showing the meanings of State, province, and country names.

On April 14 Dr. Harrington left Washington for Old Town, Maine, to pursue ethnological and linguistic studies on the Abnaki Indians. He was engaged in this project at the end of the fiscal year.

Dr. Henry B. Collins left Washington in June for the Arctic, having been invited by the Canadian Government to conduct archeological excavations with the assistance of Colin Thacker of the National Museum of Canada at Frobisher Bay on Baffin Island, where Charles Francis Hall in 1868 had reported ancient Eskimo house ruins and where a large group of Eskimo now live. The Eskimo ruins were found—buried remains of semisubterranean houses made of stones, whale bones, and turf. Excavation showed that the site had been occupied successively by Eskimo of both the prehistoric Dorset and Thule cultures. Comparison with other prehistoric Eskimo sites indicated that the Dorset phase represented is one of the earliest of that culture known. The Thule phase, which followed the Dorset, is likewise early, showing close affinities with northern Alaska, its place of origin. In addition to the archeological work, measurements were obtained and photographs taken of 80 adult Eskimo—40 males and 40 females—at Frobisher Bay. This was the first anthropometric study to be made of the present-day Baffin Island Eskimo.

In Washington Dr. Collins continued as anthropological adviser for the Encyclopaedia Arctica, which Dr. Vilhjalmur Stefansson is preparing for the Office of Naval Research. Dr. Collins' term of office as Chairman of the Board of Governors of the Arctic Institute of North America terminated at the end of the calendar year 1948, but he continued as chairman of the directing committee for the Institute's

Bibliography of Arctic Literature and Roster of Arctic Specialists. In continuation of the archeological program begun in 1948 Dr. Collins left Washington in May to conduct excavations at Resolute Bay, Cornwallis Island, N. W. T., under the joint auspices of the Smithsonian Institution and the National Museum of Canada.

From July 1 to September 10 Dr. Fenton was engaged in field work among the Seneca Indians of western New York on a grant from the Viking Fund of New York City. Working at Quaker Bridge on Allegany Indian Reservation, he obtained a life history of an aged Seneca named Chauncey Johnny John with whom Dr. Fenton has worked since 1933. Especially fine materials were collected on social organization, kinship, and age grades. Twelve reels of recordings were made which included the entire ritual of the Seneca Dark Dance, the opening address and several long prayers belonging to the Green Corn Festival, the entire Women's Rite of Thanksgiving to the cultivated crops, and an origin legend for the False-face Society in Seneca and in English.

The Fourth Conference on Iroquois Research, under the direction of Dr. Fenton, met at Red House, N. Y., October 8–10, to review outstanding accomplishments in Iroquoian studies in the fields of linguistics, ethnology, and archeology. The Proceedings of the Conference, edited by Dr. Fenton, were issued in mimeograph form by the Smithsonian Institution.

The project of collecting materials for a political history of the Six Nations was reported in a general paper to the American Philosophical Society on November 4. The same research led to examining the Kirkland Papers in Hamilton College Library, and on December 1 Dr. Fenton addressed the College on its founder: "Samuel Kirkland: Observer, Negotiator, and Educator." A lecture was given to the Anthropology Club of Syracuse University, and manuscripts were examined in local libraries. Work continued in the manuscript collections of the New York Historical Society and at the New York Public Library. The Massachusetts Archives in the State House, the Essex Institute in Salem, and the Peabody Museum of Salem were visited in January. Three reels of the Pickering Papers were completed and filed. Arrangements were made with Dr. C. M. Barbeau of the National Museum of Canada for obtaining microfilm of documents in Canadian libraries for the American Philosophical Society Library.

During the year Dr. Fenton served as a member of the Language Panel of the United States National Commission for UNESCO; he represented the Smithsonian at meetings of the Policy Board of the United States National Indian Institute, and in subsequent conferences at the State Department toward a Second Inter-American Confer-

ence on Indian Life, for which he prepared a paper. He served as President of the Anthropological Society of Washington.

Dr. Fenton published several papers on anthropological subjects in various journals during the year.

The research activities of Dr. Gordon R. Willey, anthropologist, during the year were confined principally to study of data and materials previously obtained in the field. They included the final preparation of a monograph, "Archeology of the Florida Gulf Coast," a culmination of studies begun by the Bureau of American Ethnology as early as 1923, with Dr. Willey engaged on the project since 1940. The war and other duties interrupted the completion of the manuscript, but it is now in process of publication by the Smithsonian. Eight other manuscripts by Dr. Willey are in press or awaiting publication, and four additional manuscripts are in preparation: "Ancon-Supe: Formative Period Sites of Central Perú" (with J. M. Corbett and L. M. O'Neale); "Huari, an Important Site in the Central Peruvian Highlands" (with D. Collier and J. H. Rowe); "Prehistoric Settlement Patterns in the Virú Valley, Perú," and "Archaeological Explorations in the Parita Zone, Panamá."

Dr. Willey served in a consultative capacity for the period of final editing of volumes 5 and 6 of the Handbook of South American Indians (Bureau Bulletin 143) and also assisted with certain administrative matters concerned with the Smithsonian River Basin Surveys.

Dr. Willey participated in a series of round-table discussions under the leadership of Dr. A. L. Kroeber during the months October through February. These meetings, held at Columbia University, New York, were concerned with general discussions of anthropological method and theory. Throughout the year he served as assistant editor for the Handbook of Latin American Studies of the Library of Congress Hispanic Foundation. He also served as assistant editor of the journal American Antiquity, with reference to the South American area.

From March through May Dr. Willey served as Smithsonian representative at several committee meetings of the State Department Committee for Scientific and Cultural Cooperation, and at an open meeting of the Caribbean Commission.

SPECIAL RESEARCHES

Miss Frances Densmore, collaborator of the Bureau, submitted to the Bureau a manuscript entitled "Musical Customs of the Indians of the Paraná Delta and La Plata Littoral and the Gran Chaco."

INSTITUTE OF SOCIAL ANTHROPOLOGY

The Institute of Social Anthropology was created in 1943 as an autonomous unit of the Bureau of American Ethnology to carry out

cooperative training in anthropological teaching and research with the other American republics. During the past year it was financed by transfers from the Department of State totaling $97,900 from the appropriation "Cooperation with the American Republics, 1949." Long-range planning for the Institute became increasingly difficult during the year because of threatened budget reductions for the fiscal year of 1950. Otherwise, the Institute continued to function much as in previous years, and good work was done by all staff members. Principal activities were as follow:

Washington office.—Dr. George M. Foster, Director of the Institute of Social Anthropology, made a 3-weeks trip to Spain in November 1948 to investigate the possibility of ethnographical field work in that country, with a view to throwing additional light on the development of the contemporary cultures of Hispanic America. In March 1949 Dr. Foster made a second trip to Spain, serving as Smithsonian Institution delegate at the centennial celebration of the Royal Academy of Natural, Exact, and Physical Sciences of Madrid. Dr. Gordon R. Willey assumed direction of the Institute of Social Anthropology during Dr. Foster's absence.

Upon the recommendation of the Director a grant-in-aid was extended by the Department of State to bring Dr. Luis Duque Gómez, Director of the Instituto Etnológico y Servicio de Arqueología of Bogotá, Colombia, to the United States for a 3-months period, October 1948 to January 1949. An itinerary was arranged by Dr. Foster whereby Dr. Duque was able to visit the larger universities and anthropological centers in the United States both in the East and in the West. Also upon the recommendation of the Director, a like invitation was extended to Dr. José Cruxent, Director of the Museo de Ciencias Naturales in Caracas, Venezuela. Dr. Cruxent is expected to arrive in the United States in August 1949.

Brazil.—Drs. Donald Pierson, sociologist, and Kalervo Oberg, social anthropologist, continued to give courses at the Escola Livre de Sociología e Política in São Paulo, Brazil. Dr. Pierson, assisted by students from the school, completed field work in the *caboclo* community of "A Vila" near São Paulo, and completed a manuscript describing this work. Dr. Pierson also served as official observer of the United States Government at the UNESCO Conference held in Montevideo, Uruguay, September 6–10, 1948, to consider ways and means of stimulating the development of science in Latin America. He was brought to the United States at the end of June 1949, for consultation on future plans for work in Brazil. Dr. Oberg spent July and part of August 1948 in field work among the Indians of the headwaters of the Xingú River. In June 1949 he left on a 3-months trip to the Paressí and Nambiquara groups, northwest of Cuiabá in

Mato Grosso. On both of these trips he was accompanied by students from the Escola Livre.

Colombia.—Dr. John H. Rowe returned to the United States from Popayán, Colombia, in September to accept a permanent position at the University of California. Dr. Raymond E. Crist, professor of geography at the University of Maryland, was employed in February 1949 on a temporary basis to replace Dr. Rowe. In the short time Dr. Crist has been in Popayán he has given courses and lectures in the Universidad del Cauca, dealing with Iberian culture and its dissemination in the New World, and with geographic methods and theories. He has made several short field trips to small communities near Popayán, and has been host to the American Ambassador, Willard L. Beaulac, who, with his private party, flew from Bogotá for the express purpose of becoming acquainted with the work of the Institute in Popayán.

México.—Dr. Isabel Kelly, social anthropologist, continued to represent the Institute at the Escuela Nacional de Antropología in Mexico City, giving anthropology courses and guiding independent research of students. A part of the spring of 1949 again was spent in the Totonac area, where final field notes on this group were taken, preparatory to writing a monograph describing the results of three seasons of work. Dr. Stanley Newman, linguist, resigned from the Institute in February 1949, to accept a position at the University of New Mexico. Up to this time he continued his teaching schedule at the Escuela. His research included investigations of the Otomi and Nahuatl Indian languages, and participation in the literacy campaign of the Mexican Government. A significant paper on the Otomi language was completed, and a major monograph on Nahuatl was undertaken.

Perú.—Dr. Allan Holmberg resigned from the Institute in August 1948 to accept a permanent position at Cornell University. He was immediately replaced by Dr. George Kubler, of Yale University, who arrived in Lima early in September. Dr. Kubler continued teaching projects in the Instituto de Estudios Etnológicos, and also gave a course in the University of San Marcos. He devoted much attention to the social history of the colonial period in Perú, with particular emphasis on demography, and shifts in populations during this period. This work will to a considerable extent close the gap between the data of archeological studies in the Virú Valley in north Perú, made by Smithsonian and other scientists, and the contemporary studies made by Dr. Holmberg and teachers and students of the Instituto de Estudios Etnológicos, thus completing one of the longest sequences of culture history known from any part of the world. Dr. Kubler made a brief trip in March 1949 to Bogotá and Popayán, to investigate

documents in the Colombian capital dealing with demographic movements on the west coast of South America in colonial times, and to consult with Dr. Crist on Institute of Social Anthropology matters. In June 1949 he served as Adviser to the American Delegation at the Third Annual Interamerican Indian Congress, held in Cuzco.

Publications.—Institute of Social Anthropology Publications Nos. 8 and 9 appeared during the year and Nos. 10, 11, and 12 were in press. These are listed with the publications of the Bureau of American Ethnology.

RIVER BASIN SURVEYS

The River Basin Surveys, organized in 1946 as a unit of the Bureau of American Ethnology to carry into effect a memorandum of understanding between the Smithsonian Institution and the National Park Service providing for the salvage of archeological and paleontological materials that will be lost as a result of the nation-wide program for flood control, irrigation, hydroelectric, and navigation projects sponsored by the Federal Government, continued its operations during the year. As in the past, the investigations were conducted in cooperation with the National Park Service and the Bureau of Reclamation of the Department of the Interior, the Corps of Engineers, Department of the Army, and a number of nongovernmental local institutions. The work was financed by the transfer of $145,400 ($20,000 of which was appropriated in the 2d Deficiency Act and did not become available for actual use until the beginning of fiscal 1950) to the Smithsonian Institution by the National Park Service. The money comprising these funds was derived in part from the Bureau of Reclamation and in part from the National Park Service.

Activities in the field consisted mainly of reconnaissance or surveys for the purpose of locating sites that will be involved in construction work or are so situated that eventually they will be inundated. There was a limited testing of sites to determine their nature and extent, where such was deemed essential, and at seven locations extended excavation or intensive testing was carried on. The surveys covered 67 reservoir areas scattered throughout 8 river basins and 14 States. At the end of the year the total of the reservoir areas surveyed or where some digging has been done since the start of the program in July 1946 had reached 154 located in 21 States. During the course of the work 2,107 archeological sites have been recorded, and of that number 456 have been recommended for excavation or further testing. Thus far preliminary appraisal reports have been finished for all the reservoirs, and 97 have been mimeographed for distribution to the cooperating agencies. Where several reservoirs form a unit in a single

drainage subbasin the information on all is included in a single report, so that the 97 mimeographed pamphlets contain information on some 130 of the reservoir projects. In addition to the archeological papers, one comprehensive report on the paleontological problems in the Missouri Basin was also issued. More detailed technical reports completed for a number of projects have appeared in scientific journals or are awaiting publication.

The distribution by States of all the reservoirs investigated, as of the close of the fiscal year, is as follows: California, 16; Colorado, 23; Georgia, 2; Idaho, 9; Illinois, 2; Iowa, 3; Kansas, 6; Minnesota, 1; Montana, 5; Nebraska, 16; New Mexico, 1; North Dakota, 13; Oklahoma, 5; Oregon, 12; South Dakota, 9; Tennessee, 1; Texas, 10; Virginia, 1; Washington, 9; West Virginia, 2; Wyoming, 8. Excavations completed during the year were: Colorado, 1; Nebraska, 1; North Dakota, 1; Oklahoma, 1; Oregon, 1; Washington, 1. In a number of cases the digging was started in the previous fiscal year and continued over into fiscal 1949. Other States where excavations were made in prior years are: Kansas, 1; New Mexico, 1; Texas, 1; and Wyoming, 1.

As has been the case since the start of the River Basin Surveys program, staff men in the field received full cooperation from representatives of the National Park Service, the Bureau of Reclamation, the Corps of Engineers, and various State agencies. Temporary office and laboratory space was provided at some of the projects, transportation and guides were furnished at others, and in several instances labor and mechanical equipment made available by the construction agency materially increased excavation operations. Had it not been for this assistance it would not have been possible to accomplish all that was done during the year. The National Park Service was primarily responsible for obtaining the funds which supported the program and continued to serve as the liaison between the Smithsonian Institution and the other governmental agencies, both in Washington and through its several regional offices. The untiring efforts of Park Service personnel played a large part in furthering the progress of the program as a whole.

The main office in Washington had general direction and supervision over the work in Oklahoma, Texas, Minnesota, North Dakota (in the drainage of the Red River of the North), Iowa, Illinois, Colorado (outside of the Missouri Basin), and California. In the Missouri Basin, direction of the program was from a field headquarters at Lincoln, Nebr., where all the materials collected by the survey and excavation parties were also processed. Activities in the Columbia Basin were supervised from a field office located at Eugene, Oreg.

Washington office.—Throughout the fiscal year the main head-

quarters of the River Basin Surveys continued under the direction of Dr. Frank H. H. Roberts, Jr. Carl F. Miller, Joseph R. Caldwell, and Ralph S. Solecki, archeologists, were based on that office, although Caldwell and Solecki did not work full time for the Surveys.

Richard P. Wheeler was appointed archeologist on the staff on August 27, and from that date until May 16 functioned under the direction of the Washington office, although all his work was done in the field. On May 16 he was transferred to the Missouri Basin and from then until the close of the year was based on the Lincoln headquarters.

Mr. Miller spent most of the year in the office preparing reports based upon material gathered in the field during the previous year, and assisting the Director in reviewing the literature pertaining to archeological manifestations occurring in areas where additional reservoir projects are proposed. His "Appraisal of the Archeological Resources of the Clark Hill Reservoir Area, South Carolina and Georgia" was completed and mimeographed for distribution in December. Another article, "Early Cultural Manifestations Exposed by the Archeological Survey of the Buggs Island Reservoir in Southern Virginia and Northern North Carolina," was published in the Journal of the Washington Academy of Sciences, vol. 38, No. 2, December 1948. A paper based on information obtained during the survey of the Clark Hill Reservoir, "The Lake Spring Site, Columbia County, Georgia," was to appear in American Antiquity, vol. 15, No. 1, July 1949. Several others have been accepted for publication elsewhere. Mr. Miller made two trips to Clarksville, Va., in the late winter and early spring, the first for the purpose of investigating unauthorized pot-hunting activities in the Buggs Island Reservoir area, and the second to speak before the Archeological Society of Virginia on the problems of the Buggs Island archeological program. He also went to Richmond, Va., where he spent 2 days at the Valentine Museum examining manuscripts and other documentary materials pertaining to early explorations and surveys in Virginia, northern North Carolina, and eastern West Virginia in an effort to obtain further data bearing on the aboriginal history of the Buggs Island area.

In July and early August Mr. Caldwell collaborated with Mr. Miller in working over the materials collected during the Clark Hill Reservoir survey. During that period he prepared a paper, "The Rembert Mounds, Elbert County, Georgia," based on new information obtained at Clark Hill. Another article, "Palachacolas Town, Hampton County, South Carolina," was printed in the Journal of the Washington Academy of Sciences, vol. 38, No. 10, October 15, 1948. On August 19 Mr. Caldwell joined Dr. Robert E. Bell, of the University of Oklahoma, at Wagoner, Okla., and began the excavation of a large mound

at the Norman Site in the Fort Gibson Reservoir basin. That work continued until September 22. Mr. Caldwell returned to Washington on September 25 and on October 3 was granted leave of absence to join an expedition of the Universities of Chicago and Pennsylvania in Iraq and Iran. He returned to duty on the staff of the River Basin Surveys June 26, 1949, and began work on materials from the Allatoona Reservoir basin in Georgia.

Ralph S. Solecki devoted the summer and fall months to the preparation of reports on his work at the Bluestone and West Fork projects in West Virginia. The Bluestone paper was mimeographed and distributed in December and that for the West Fork in March. Mr. Solecki also prepared a detailed article, "An Archeological Survey of Two River Basins in West Virginia," which was published in West Virginia History, vol. 10, Nos. 3 and 4. In December he was temporarily transferred to the regular staff of the Bureau of American Ethnology and was sent to Natrium, W. Va., to excavate a mound on the property of the Pittsburgh Plate Glass Co. The latter organization planned to level the mound to make room for new buildings and in order that nothing of value might be destroyed made arrangements with the Bureau to have it done properly, providing the necessary labor for the project. Mr. Solecki returned to the River Basin Surveys on January 12. In following months he continued to work on the material from West Virginia and on May 8 was transferred to the Smithsonian Institution staff so that he could accompany a party of the United States Geological Survey to Alaska for an archeological reconnaissance along the upper Kukpowruk and Kokolik Rivers in northern Alaska. At the close of the fiscal year he reported having located some 50 late Eskimo sites.

California.—Investigations in California were not as extensive as in previous years and were limited to three reservoir projects. In October David A. Frederickson and Albert Mohr, field assistants of the River Basin Surveys, working under the general supervision of Francis A. Riddell, assistant archeologist of the California Archeological Survey, University of California, and in cooperation with the latter organization, examined the areas to be flooded by the Black Butte, Farmington, and New Melones Reservoirs, all Corps of Engineers projects.

The Black Butte Dam is to be built in Stony Creek, and the basin it will flood lies in Glenn and Tehama Counties, a region formerly occupied by the Wintun. The survey located 26 sites in the area and it is believed that excavations in a number of them would provide a reasonably accurate and balanced picture of the material culture of the Indians who lived there.

The Farmington Dam is planned for Littlejohn Creek, and the

reservoir formed by it will inundate areas in both San Joaquin and Stanislaus Counties. It would seem that in aboriginal times that section was more suitable for occupation than it has been in recent years because 24 sites were found there. Most of them are of the surface variety, indicating seasonal occupation, but some have cultural deposits with artifacts, bone, and shell occurring in some abundance. All the artifacts are alike, both in types and material, and are of particular interest because they consist in the main of crude core tools, cores, and flake tools, with only a few blade fragments and no arrowheads. The material from which they were made occurs in the local stream beds in the form of cobbles. Excavations in a number of the sites are recommended for the purpose of obtaining information both as to their probable position in the chronological sequence of the area and as to their relationships.

The New Melones Reservoir will fill a deep and narrow valley formed by the Stanislaus River in Calaveras and Tuolumne Counties. The area is one in which there was considerable mining activity at one time, and there is an existing reservoir which has modified the surface of the ground to some degree. Consequently only four sites were noted, despite the fact that the Northern Miwok once inhabited the region, and no further archeological activities were recommended.

Colorado.—Because of the physiographic character of the area included within the political boundaries of Colorado the numerous projects there occur within the limits of several drainage systems. Consequently some of the archeological investigations have been conducted as a part of the Missouri Basin program, while others have been carried on as separate units of the Surveys as a whole. Only the latter are discussed in this section of the report.

At the start of the fiscal year Donald Eastman and Gary L. Yundt, field assistants, were continuing reconnaissance of the area involved in the Taylor Lake Enlargement of the Gunnison-Arkansas project. They completed this work on July 7, after having located only two sites that will be covered by the waters of the larger lake resulting from the construction of a new dam. The sites apparently were former camps and only surface material was present. The latter, however, is crude in character and suggests a much earlier cultural horizon than that of the late nomads. Neither of the sites showed sufficient depth to warrant excavation, and no further work is recommended for that project. From Taylor Lake, Eastman and Yundt proceeded to the Cimarron Damsite located on the Gunnison River just below the confluence of the latter and the Cimarron. The area to be flooded by this project had previously been surveyed in part by the Chipeta Chapter of the Colorado Archeological Society, Montrose, which made it possible for the Survey men to complete

their work by July 17. All the sites located, eight in number, indicate that they were camping places, and the surface materials collected from them are typical of the late nomadic Indians of the region. Similar sites are abundant outside of the basin of the proposed reservoir, hence no further investigations are needed there. Eastman and Yundt returned to Gunnison, Colo., from the Cimarron project and, having completed their reports, resigned from the River Basin Surveys on July 23. During the course of their investigations they worked under the general direction and supervision of Dr. C. T. Hurst of Western State College, Gunnison, who had cooperated with the River Basin Surveys on a number of previous surveys.

Arnold M. Withers, archeologist, completed reconnaissance of nine proposed reservoir areas in the Blue-South Platte project, which he had started toward the end of the previous year, and examined six of those in the Gunnison-Arkansas project east of the Rocky Mountains. All the proposed reservoirs of the Blue-South Platte project, Two Forks, Shawnee, Blue, Snake, Tenmile, Ruedi, Pando, Piney, and Empire, are located in the high mountain valleys of the Colorado Rockies at altitudes ranging from 8,000 to 10,000 feet above sea level. They will be situated in Douglas, Park, Summit, Eagle, Pitkin, and Clear Creek Counties. Only six definite archeological sites were found in the nine reservoir areas, although further surveys are recommended for the Snake and the upper part of the Two Forks, and they appear to have been temporary camps occupied by a people engaged in hunting and gathering wild food products. At none of them are the deposits of sufficient depth to warrant excavation. The materials collected from the surface suggest that the sites are prehistoric, although they have no great age, and that they probably are attributable to Ute Indians.

The six proposed reservoirs of the Gunnison-Arkansas project, the Graneros, Cedarwood, Ben Butler, Pueblo, Higbee or Purgatoire, and Horse Creek, are in the broken country of the High Plains along the Arkansas or its tributaries in Pueblo, Huerfano, Otero, and Bent Counties, Colo. The rapid survey of the area by Withers produced a total of only 13 sites for the project. They consist of rock shelters and open camps. At a number of the latter, tipi rings were noted. Although the small number of sites indicates that the area was sparsely populated, the character of the materials collected from them suggests that a long period of time is represented. Testing is recommended for some of the rock shelters and two of the stone-circle sites, but none appears to be worthy of complete excavation. A more intensive investigation of the Pueblo and Purgatoire reservoir basins is indicated if the projects are authorized and construction work is started. Withers completed his work and left the Surveys on August 14.

During the investigations he was provided with a base of operations by the University of Denver.

Preliminary reconnaissance of the eight reservoirs included in the Colorado-Big Thompson project by the University of Colorado was completed in the autumn of 1947. In accordance with recommendations made at that time, the River Basin Surveys arranged for a more intensive survey and the testing of some sites in the Granby Reservoir on the Colorado River in Grand County. That work was carried out during August and September by Robert F. Burgh, field assistant, who was on leave of absence from the University of Colorado Museum, aided by William Woodard and Byron W. Houseknecht, student assistants. Only four sites were located in the area to be flooded, and two of those showed only surface traces of stone chips and a few implements. Another consisted of stone circles, presumably tipi rings, but yielded no artifacts. The fourth was a camp site located on the west side of the basin on a terrace adjacent to Stillwater Creek. Trenching of the site produced a variety of cultural remains consisting of hearths, potsherds, stone projectile points, stone scrapers, manos, metate fragments, and animal bones. No traces of house remains were found, and the occurrence of fireplaces at varying depths below the surface suggests that there were repeated but casual occupations of the terrace during successive seasons without any permanent habitation. Potsherds from the site were of two kinds, cord-marked and corrugated. The cord-marked is from a cooking ware of Woodland type, while the corrugated undoubtedly came from the Northern Periphery of the Southwest. The pottery indicates that the site probably dates between A. D. 900 and 1300. The bulk of the material obtained there shows that the affiliations were clearly with the prehistoric Plains cultures, particularly those responsible for the camp sites along the foothills in northeastern Colorado.

Conclusions, based on the results of the work in that area, are that no further investigations are warranted in the Colorado-Big Thompson project unless construction operations accidentally uncover unsuspected remains. West of the Continental Divide there are no sites as good as the one examined in the Granby Reservoir, while east of it there are numerous examples outside the reservoir basins which not only appear to have the same cultural identity as those within them but to offer greater promise.

Columbia Basin.—Work in the Columbia Basin was based on the field headquarters at Eugene, Oreg., where office and laboratory space was provided by the University of Oregon. Dr. Philip Drucker, on detail from the Bureau of American Ethnology, continued to direct the program until October 1 when he returned to Washington and his regular duties prior to being granted military leave beginning October

22. After Dr. Drucker's departure from Eugene, Homer Douglas Osborne, archeologist, was appointed acting field director and placed in charge of the office there. He continued in that capacity throughout the remainder of the year.

From July to early September, two parties consisting of two men each, were engaged in the investigation of reservoir areas in the Columbia Basin. During that time they explored 15 reservoir basins, 6 of which are Corps of Engineers projects, and 9 of which are projects of the Bureau of Reclamation. The Corps of Engineers projects include the 4 navigational reservoirs on the lower Snake River in Washington, Ice Harbor, Lower Monumental, Little Goose, and Lower Granite. In addition Lucky Peak Reservoir basin in Idaho was examined, and the results of the survey of Chief Joseph (Foster Creek) Reservoir in east-central Washington initiated some years ago by the University of Washington were checked and the survey was completed. The work done in Bureau of Reclamation reservoirs involved the examination of sites in the Deschutes project, Benham Falls and Prineville Reservoirs, and checks of the proposed enlargement of Wickiup and Crane Prairie Reservoirs. In addition a series of small reservoirs in eastern Oregon and central Idaho were surveyed. They were: Mason, Ryan Creek, and Bully Creek in northeastern Oregon; and Lost Valley Enlargement and Horse Flat Reservoirs in Idaho. Within the boundaries of those 15 reservoir basins a total of 128 archeological sites were found and recorded.

Excavation projects were carried out in the McNary Reservoir area, Oregon-Washington, and in the O'Sullivan (Potholes) Reservoir, Washington. The work at McNary was a cooperative undertaking between the River Basin Surveys and the University of Oregon, while that at O'Sullivan was a joint venture between the Surveys and the University of Washington.

Investigations at McNary were carried on from August 5 to September 11 under the direction of Homer Douglas Osborne. The digging was done by students from various west coast universities. Extensive tests were made in two sites on Berrian Island, Wash., which had been designated as a source of aggregate for dam construction, and at an important one on the Oregon side of the river. In addition to previously unknown information about local Indian village and house patterns, the excavations produced 48 burials and 1,870 artifacts. The skeletal material provides one of the largest series thus far available for study and should throw considerable light on the physical characteristics and relationships of the people. The artifacts will give a good cross section of the material culture prevailing at the time of first contact with European influence.

The O'Sullivan project was well under way at the start of the fiscal

year and continued until August 19. Richard D. Daugherty, archeologist, was in charge of the party, which consisted of students from the University of Washington. The scene of operations was a village site located on the shores of Moses Lake, an area which will be inundated when the dam is completed. Three house-pit depressions and the terrain immediately surrounding them were carefully examined. Good data were obtained on the form and construction of the houses, and the series of artifacts recovered during the digging will aid in determining the cultural status of the people. The absence of all European objects indicates that the site antedates the period of exploration and early trading posts. The results at O'Sullivan, in general, indicate that more intensive work should be done there.

Special mention should be made of the excellent cooperation on the part of other governmental agencies. The National Park Service, through the Region Four office at San Francisco and the Columbia Basin Recreational Survey office at Portland furnished the Eugene office with current information on reservoir priorities, construction schedules, and field maps. The Bureau of Reclamation, through the Region One office in Boise, Idaho, not only supplied maps of reservoir areas and information on their projects, but greatly facilitated the archeological investigations by placing vehicles at the disposal of the survey parties. The Corps of Engineers, through the office of the Division Engineer, and also the Portland and Seattle District offices, provided maps and other essential information. In addition the Portland District office made a vehicle available for use at the McNary project, furnished a temporary headquarters, and provided assistance in the mapping of sites.

Throughout the period of active work Dr. Drucker made numerous trips from the Eugene office to the various parties and the excavation projects. He also met with Dr. Robert F. Heizer, Director, California Archeological Surveys, and assisted in perfecting plans for the cooperative work to be carried on by that organization. After completing arrangements for maintaining the Eugene office during the winter months, he returned to Washington on October 1.

At the start of the year George L. Coale, archeologist, and Francis A. Riddell, Harry S. Riddell, Jr., and Homer Douglas Osborne, field assistants, were engaged in the survey of the Benham Falls, Prineville, Wickiup, and Crane Prairie Reservoirs. That work was completed on July 11, and Coale and Osborne returned to Eugene to assist Dr. Drucker in making preparations for the excavations at the McNary Reservoir. The two Riddells proceeded to northeastern Oregon where they made a reconnaissance of the Mason Creek and Ryan Creek Reservoirs. The surveys there being finished on July 16, they moved to Chief Joseph (Foster Creek) where on July 26 they completed

the investigations previously started by the University of Washington. Francis A. Riddell resigned from the Surveys on July 30. George L. Coale met Harry S. Riddell, Jr., at Pasco, Wash., on the 27th, and the two proceeded from there to Ice Harbor and Lower Monumental Reservoirs. After their reconnaissance of those two projects they went on to the Lucky Peak, Lost Valley, and Horse Creek Reservoirs in Idaho, and the Bully Creek Reservoir in Oregon. William W. Burd, who was appointed a field assistant on August 16, and Joel L. Shiner, who was promoted from the crew at McNary to field assistant, spent the period from August 18 to 30 examining the Little Goose and Lower Monumental Reservoirs for archeological remains. Burd returned to Eugene and resigned on August 31, while Shiner rejoined the party at the McNary excavations and continued with it until September 9 when he resigned. After completing the field work at Moses Lake, Richard D. Daugherty proceeded to Seattle, Wash., where he processed and studied the materials obtained from the excavations and prepared a report on the results of the investigations. His appointment as archeologist terminated on September 16.

As previously mentioned, Osborne spent the first few weeks of the year on survey duties and was then recalled to Eugene to aid in preparations for the McNary project. He went with the party to that reservoir on August 5 and on August 16 was promoted to archeologist and placed in charge of the excavations. Upon his return to Eugene in September he was made Acting Field Director, and continued to function in that capacity throughout the remainder of the year. During the fall and winter months he wrote the preliminary appraisal reports for the 15 reservoirs surveyed during the summer, prepared a summary report and a longer, more detailed manuscript on the McNary excavations, and made compilations of data on historical references, ethnological descriptions, and trade goods to be used as ready sources for information on the Columbia Basin. During February he made a survey of the Big Cliff Reservoir and checked the various bank-control projects of the Corps of Engineers along the Willamette River and its tributaries. On May 26 and 27 he participated in a conference at Pendleton, Oreg., where representatives of the Corps of Engineers, the National Park Service, and the Bureau of Indian Affairs discussed the problem of the removal of Indian burials from areas that are to be flooded. Throughout the winter months Osborne was assisted in the laboratory by Lloyd Collins and Hiroto Zakoji, students of the University of Oregon.

Illinois.—Archeological studies in Illinois consisted of the examination of the records of previous surveys in the Illinois River Basin and the investigation of two reservoir areas where dams were under construction.

During February Richard P. Wheeler conferred with the District Engineer at Chicago about the flood-control program for the Illinois River Basin, discussed archeological problems involved with Dr. John C. McGregor, associate professor of anthropology at the University of Illinois, and with Dr. Kenneth G. Orr, assistant professor of anthropology at the University of Chicago. March 10 to 18, Wheeler checked the survey files of the Department of Anthropology and worked in the Harper Library, at the University of Chicago. Leaving Chicago he proceeded to Springfield, Ill., where he conferred with Dr. Thorne Deuel, Director of the Illinois State Museum. From March 21 to 25 he made a reconnaissance of the Fondulac and Farmdale Reservoir basins, the dams then being built, on Farm Creek, in Tazewell County, Ill. No archeological sites were found in those areas, and no further work was recommended.

In April Wheeler prepared a preliminary report, "Archeological Resources of the Proposed or Considered Reservoirs in the Illinois River Basin, Central and Northern Illinois," which embodied a synopsis of present knowledge of the archeology of this region and provided a list of known sites (based on the site list prepared for the River Basin Surveys in September 1947 by Dr. J. C. McGregor) in 10 of the 15 proposed reservoirs in the Illinois River Basin for which maps are available.

On May 16 Wheeler was transferred to the Missouri Basin, and his activities from then until the end of the year are included in that portion of the report.

Iowa.—Work in Iowa was confined for the most part to surveys of two reservoir basins and the area immediately adjacent to the dam site of a third where preliminary construction activities were already under way.

Richard P. Wheeler spent the period December 6 to 10 at the Red Rock Reservoir project, on the Des Moines River, and December 13 to 15 at the Rathbun Reservoir on the Chariton River. During the progress of the work he consulted with Dr. Charles R. Keyes, Director of the Archeological Survey of Iowa, about the character and extent of the archeological remains in the two areas. In his reports prepared at the conclusion of his field investigations, Wheeler records 15 mound and occupation sites in the Red Rock basin, 4 of which will be involved in the dam construction, and 6 in the Rathbun area. More intensive studies under more favorable field conditions were recommended for both reservoirs.

Between January 24 and February 3, Wheeler made a preliminary reconnaissance of the Coralville Reservoir, on the Iowa River, in Johnson and Iowa Counties, Iowa. Eight mound sites and one occupation site were located. Ten other sites, recorded prior to the

survey, could not be found because of the deep snow cover. Further work will be necessary before recommendations can be made for the salvage of archeological remains in that reservoir area.

Missouri Basin.—The Missouri Basin project, as in previous years, continued under the general direction of Dr. Waldo R. Wedel and was based on the field headquarters at Lincoln, Nebr. During the fiscal year 12 new reservoir basins were surveyed for archeological remains; two areas only briefly examined in former seasons were revisited and subjected to intensive reconnaissance; while comprehensive excavations were carried on at one location. In addition to those activities and certain paleontological investigations, laboratory and office work were carried on throughout the year.

As the fiscal year opened, three archeological units and one paleontological unit were engaged in field work. The largest project was the excavation program at Medicine Creek, Nebr., under the field direction of M. F. Kivett, archeologist, with George Metcalf as assistant. The work was made possible through an agreement with the Bureau of Reclamation under which the Bureau provided labor and power equipment while the River Basin Surveys provided the technical supervision and maintained the scientific records. This project terminated on August 20, having produced a large body of data and artifacts for several inadequately known prehistoric culture horizons. Aside from the scientific returns of the operation, it is important to note that the applicability of power machinery to the excavation of aboriginal village sites under careful technical supervision was amply demonstrated. The findings add much new information to that previously obtained elsewhere in the Central Plains through the small-scale sampling of many sites.

A second unit under J. T. Hughes, archeologist, with J. M. Shippee as assistant, was at work in Angostura Reservoir, South Dakota. Intensive survey there added numerous sites to those recorded during preliminary reconnaissance in 1946; and also disclosed the presence of at least one site that may have an antiquity of several thousand years. Because of the extreme scarcity of data from this early period, and the usual difficulty of working such sites, it is imperative that further excavation be carried on there. From September 15 to 30 Hughes and Shippee carried on preliminary reconnaissance at the Edgemont and Keyhole Projects in Wyoming, and at the Pactola and Johnson Siding Reservoir basins in South Dakota. At Edgemont 28 sites were recorded, while 29 were noted at Keyhole. Only one was noted at Pactola and none at Johnson Siding.

A third unit under Paul L. Cooper carried on excavations at the Heart Butte Reservoir basin, North Dakota, through the month of July, and then transferred its activities to the proposed lower Oahe

Reservoir project on the Missouri River a few miles above Pierre, S. Dak. On the basis of findings by that unit, it appears unlikely that remains of any great importance to archeology will be lost at Heart Butte. At Oahe, 61 sites were recorded between Pierre and the Cheyenne River, a distance of about 40 miles. They include some of the largest, best preserved, and most impressive Indian village remains in the Missouri Basin. Most of them are virtually untouched by trained archeologists and, with one or two possible exceptions, none has been adequately tested by excavation. Five of the sites will be affected almost as soon as construction work begins on the dam site, the access roads, and the railroad classification yards. Hence, salvage operations will be necessary at an early date. Because of the abundance and variety of remains, comprehensive excavation has been recommended to begin soon and to be carried forward vigorously so that a representative sample of the materials to be affected by Oahe Reservoir may be saved.

From November 9 to 24 Cooper and Shippee excavated a burial mound in the spillway area of Fort Randall Dam, South Dakota. The Corps of Engineers provided a bulldozer and operator as needed, and assisted in numerous other ways. Without that cooperation, the work there would not have been possible. The findings, although not spectacular, are important because burial mounds are extremely rare on that portion of the Missouri, and their temporal and cultural relationships to other archeological complexes of the region can be determined, if at all, only through controlled excavations by trained investigators.

A paleontological unit under Dr. T. E. White was in the field from July 1 to October 1. It worked at the Boysen Reservoir, Wyoming; in the Canyon Ferry Reservoir area on the Missouri River north of Townsend, Mont.; at the Angostura Reservoir, South Dakota; and at the Cedar Bluff Reservoir on the Smoky Hill River in Kansas.

Limited field work was resumed in the spring. Richard P. Wheeler, archeologist, left Lincoln on May 27 for preliminary reconnaissance at several hitherto unvisited reservoir projects and for further survey of others previously examined in preliminary fashion. Projects visited by Wheeler prior to June 30 include Rocky Ford, Philip, Bixby, and Shadehill, in South Dakota; Cannonball and Dickinson, in North Dakota; Moorhead, in Wyoming-Montana, and Onion Flat in Wyoming.

Among the particularly gratifying features of the year's field work were the results achieved through use of power machinery and the direct cooperation extended by the Bureau of Reclamation at Medicine Creek and by the Corps of Engineers at Fort Randall Reservoir. Such cooperative work, in terms of research accomplished, is the most

economical way of salvaging archeological remains on the scale needed. Application of the same procedures, including mechanized earth-moving operations, to other projects seems to be the only way of obtaining irreplaceable scientific data in the little time left for its recovery.

In the laboratory 39 maps were drawn. Many of them were field maps, others were site and reservoir maps for use with published reports. Throughout the winter specimens were selected and photographed as analysis for technical reports proceeded. Including field photographs, a total of 918 negatives and 374 color transparencies were processed; 61 lantern slides were added to the slide series; 918 prints were made, cataloged, and filed; 1,008 prints were made for report illustrations and reference purposes; and 350 enlargements were made for publicity and reference use.

All specimens collected during the field season, a total of 45,233, were cleaned, numbered, cataloged, and stored. The majority of them came from Medicine Creek, Angostura, and Oahe Reservoirs. Samples of bone, shell, and vegetal specimens from various sites were packed and sent to specialists elsewhere for identification. In addition, soil samples from some of the sites were sent out for analysis, and wood and charcoal specimens were sent away for tree-ring studies.

The skeleton of an adolescent covered with thousands of shell beads, sent to Lincoln in a plaster case from the Harlan County Reservoir, Nebraska, in 1946, was mounted permanently for exhibit purposes. Pottery restoration, principally of Medicine Creek material, continued throughout the spring months, 17 earthenware vessels having been restored by June 30.

Information concerning over 129 sites was added to the site file, and 45 maps were indexed and added to the map reference file.

On July 1, J. Joseph Bauxar, archeologist, was stationed at the Lincoln, Nebr., headquarters, continuing the ethnohistorical research project he had started the preceeding year. The material collected consisted of such information as is pertinent to the archeologists' problem of determining the ethnic affiliations of the archeological complexes in the Missouri River Basin. Some 30 tribes and subtribes are represented in the Tribal Culture File. On January 9, 1949, Mr. Bauxar was transferred to the Oklahoma project of the River Basin Surveys and proceeded to Norman for the purpose of analyzing materials from the Norman site in the Fort Gibson Reservoir.

Wesley L. Bliss, archeologist, devoted the time from July 1 until January 8 in the preparation of a general article "Birdshead Cave, a Stratified Site in the Wind River Basin, Wyoming," and a technical report on the same project. In late August he visited the sites in the Medicine Creek area being excavated by the State Museum of the

University of Nebraska and in October accompanied a group from that institution on a trip to Signal Butte in western Nebraska for the purpose of reexamining the early sites at that location. On the basis of information obtained during the course of his work, he prepared a paper "Early and Late Lithic Horizons in the Plains" which was presented before the Sixth Conference for Plains Archeology at Lincoln in November. Mr. Bliss left the River Basin Surveys staff on January 8.

In addition to the field work previously mentioned, Paul L. Cooper in September accompanied Dr. Waldo R. Wedel, Dr. Gordon Baldwin of the National Park Service, and Dr. J. O. Brew and Frederick Johnson of the Committee for the Recovery of Archeological Remains, on an inspection trip to Missouri Basin archeological sites in Wyoming, Montana, North Dakota, South Dakota, and Nebraska. Throughout the remainder of the year his activities were centered in the laboratory at Lincoln. Until March 24 he was in charge of the Lincoln headquarters during such times as Dr. Wedel was in Washington, but from that date until June 30 devoted most of his attention to analyzing the data and specimens obtained during the field season and in the preparation of reports. He wrote a summary of the work done at two reservoirs in South Dakota, "Recent Investigations in Fort Randall and Oahe Reservoirs, South Dakota," which was published in American Antiquity, vol. 14, No. 4, April 1949.

Robert B. Cumming, Jr., archeologist, continued to plan and supervise the laboratory procedures, as mentioned in an earlier paragraph, and from March 24 until June 30 was in charge of the Lincoln office when Dr. Wedel was not present at the laboratory.

Following the summer field work Jack T. Hughes, archeologist, spent the remainder of the year in the laboratory studying the data and materials collected from the various reservoirs he had examined and writing reports on the results of his work. He prepared a memorandum on Cheyenne Basin archeology for the National Park Service and completed an article, "Investigations in Western South Dakota and Northeastern Wyoming," which was published in American Antiquity, vol. 14, No. 4, April 1949. He collaborated with Dr. Theodore E. White in writing a manuscript "The Long Site, an Ancient Camp in Southwestern South Dakota." The latter is a preliminary account of the archeology and physiography of one of the most significant sites yet found in the Angostura Reservoir basin. Hughes also prepared a paper, "Archeology and Environment in the Western Great Plains," which he presented at the Sixth Conference for Plains Archeology held in Lincoln in November. In addition he wrote a paper, "An Experiment in Relative Dating of Archeological Remains by Stream Terraces," which he read before the Anthropology

Section of the Nebraska Academy of Sciences in May. He wrote a memorandum on geological deposits and archeological remains in the Tiber Reservoir basin, on the Marias River in northern Montana, for the United States Geological Survey, and "A Note on Fireplaces" for the Plains Archeological Conference Newsletter. Earlier in the year he had prepared an article, "Naming Projectile Point Types," for the same journal. At the close of the year he was occupied with a report on the Nebraska State Historical Society's investigations at the Barn Butte site in western Nebraska and was continuing his work on the development of a correlation table dealing with early remains in the western United States.

Upon the completion of the excavation project at the Medicine Creek Reservoir, Marvin F. Kivett, archeologist, returned to Lincoln on September 1 and began the preparation of a brief preliminary report for the use of H. E. Robinson, District Manager of the Bureau of Reclamation. Included in it was a tabulation of work completed at various sites in the Medicine Creek Reservoir basin. After that manuscript was finished Kivett wrote a summary account, "Archeological Investigations in Medicine Creek Reservoir, Nebraska," which was printed in American Antiquity, vol. 14, No. 4, April 1949. He then turned his attention to completing a laboratory analysis of the more than 30,000 specimens collected at Medicine Creek and to a study of comparable materials gathered in the same area by parties from the Nebraska State Historical Society and placed at his disposal, with the accompanying data, for inclusion in the final technical report. In addition, Mr. Kivett wrote a technical paper on the prehistoric ossuary which he excavated at the Harlan County Reservoir in the fall of 1946, and another "Archeology and Climatic Implications in the Central Plains," which was presented before the Sixth Conference for Plains Archeology. Two brief articles, one concerning the use of power equipment in archeological work and the other dealing with pottery nomenclature, were printed in the Plains Archeological Conference Newsletter.

One trip of 4 days was made by Kivett to the Medicine Creek project during October for the purpose of marking trees from which sections for dendrochronological studies were to be cut under the supervision of the Bureau of Reclamation. In May he made a 1-day trip to the Harlan County and Medicine Creek Reservoirs to point out to members of the Missouri Basin Inter-Agency Committee archeological work completed and that contemplated for those reservoirs. Mr. Kivett resigned from the River Basin Surveys on May 31 to accept an appointment as Assistant Director of the Museum of the Nebraska State Historical Society.

George Metcalf, field and laboratory assistant, participated in the

excavations at Medicine Creek and, after his return to the Lincoln headquarters on August 24, assisted in the cleaning and cataloging of the last consignment of specimens from the project. From September 12 until October 20 he supervised and aided in the processing of some 7,000 specimens recovered from Medicine Creek sites by the Nebraska State Historical Society. As a part of that task all suitable shell, bone, and vegetal material was listed and prepared for submission to specialists for identification. Throughout the winter and spring months he worked with Mr. Kivett in the analysis of the Medicine Creek materials and wrote sections on worked bone, shell, and pottery for inclusion in the final technical report. He also assisted in the selection of specimens and the arrangement of photographic plates for the final report. At the end of the fiscal year he was engaged in making an analysis of the house remains in the Medicine Creek area.

J. M. Shippee, field and laboratory assistant, returned to Lincoln with the Hughes party on October 1 and from then until November 8 supervised the dismantling of the laboratory and its reinstallation in new quarters. Mr. Shippee then accompanied Mr. Cooper to the Fort Randall Reservoir, where he assisted in the excavation of a burial mound located on the site of the dam spillway. He returned to Lincoln in late November and spent the remainder of the year in the restoration of pottery and other specimens and in the cleaning and mounting, for exhibition purposes, of a juvenile skeleton which had been removed intact from an ossuary at the Harlan County Reservoir. He prepared a paper, "Some Problems of the Nebo Hill Complex," which was read before the Anthropological Section of the Nebraska Academy of Sciences on May 7. At the close of the year he was preparing and assembling equipment for the various parties starting for the field.

Richard P. Wheeler, archeologist, was transferred to the Missouri Basin in May and on May 27 left Lincoln to make a series of preliminary surveys at reservoir projects in South Dakota, North Dakota, Montana, and Wyoming. By the end of the year he had visited eight reservoir areas. On June 30 he was at Fort Washakie, Wyo., where he obtained permission from the Business Council of the Shoshones and Arapahos to make preliminary surveys of the proposed Soral Creek and Raft Lake reservoir basins, which are located in the Wind River Indian Reservation, immediately after the start of the new year.

Dr. Theodore E. White, paleontologist, confined his activities, with one minor exception, to work on the Missouri Basin problems throughout the fiscal year.

From July 1 to 12 the lower Eocene deposits in the Boysen Reservoir area on the Big Horn River north of Shoshoni, Fremont County, Wyo., were prospected for fossils. Five fossiliferous "pockets," which

will be inundated when the reservoir is flooded, were found. The results of the work there confirmed the conclusions of the members of the United States Geological Survey who had mapped the structure and stratigraphy of that area.

From July 14 to August 19 the Oligocene and Miocene deposits in the Canyon Ferry Reservoir area on the Missouri River north of Townsend, Broadwater County, Mont., were prospected for fossils. Material was obtained from three localities in the Oligocene and two in the Miocene. All those localities will be inundated.

After the close of the work at Canyon Ferry, White's party proceeded to the Angostura Reservoir on the Cheyenne River in Fall River County, S. Dak., to make a physiographic study of the area in connection with an early-man site. The period from August 21 to September 3 was spent in collecting data for that study. The party returned to Lincoln, Nebr., on September 4 in order to prepare a preliminary report on the results of the physiographic study.

From September 23 to October 1 the Upper Cretaceous Carlile Shale in Cedar Bluff Reservoir on the Smoky Hill River south of Wakeeney, Trego County, Kans., was prospected for vertebrate fossils. Although a number of specimens were found, they were so badly disintegrated by the crystallization of gypsum and the weathering of marcasite that they were not worth collecting.

About 70 specimens, representing 20 genera, were obtained in the Boysen Reservoir area. Although the specimens were for the most part rather fragmentary, they were sufficiently well preserved to establish the age of those beds as belonging to the Lost Cabin faunal zone of the lower Eocene, a fact that had not previously been demonstrated. In the material obtained is the most nearly complete skull yet found of the primitive insectivore, *Didelphodus*. Although badly crushed and not impressive to look at, it adds a number of previously unknown details to the knowledge of the cranial morphology of that form. Also the skull and jaws of *Didymictis*, a primitive carnivore a little larger than a fox, was obtained in that area. Heretofore the form was known only from upper and lower dentitions.

Nearly 125 specimens, principally insectivores, rodents, and small artiodactyls, were obtained in the Canyon Ferry Reservoir area. Most of the specimens were found in the Oligocene deposits which previously were very poorly known. The material obtained demonstrated that deposits of both lower and middle Oligocene age were present in that area. One of the Oligocene insectivores belongs to a problematical family previously unknown in deposits later than the upper Eocene. Also, it is the best-preserved specimen yet found and adds many details of the skull and dentition to the knowledge of that group. The small Oligocene mammals of that area, when compared

to those of the same age on the Plains, illustrate the principles of geographical variation quite as well as the living species.

White's laboratory activities for the year fall into two periods. The first, from October 4 to November 5, was spent at the field office at Lincoln, Nebr., preparing supplementary reports on the reservoirs visited and in identifying the osteological material obtained in archeological excavations. Also, during that period the first draft of the technical report on the physiographic studies in the Angostura area was prepared. The remaining time was spent in the division of vertebrate paleontology at the United States National Museum. In addition to the preparation of technical reports on the paleontological material obtained in the reservoir areas, six boxes of osteological material from the Missouri and Columbia Basins were identified.

White completed two technical reports representing the results of field and laboratory activities. They are: "Preliminary Analysis of the Vertebrate Fossil Fauna of the Boysen Reservoir Area," and "Endocrine Glands and Evolution No. 2: The Appearance of Large Amounts of Cement on the Teeth of Horses." Both were submitted for publication. At the close of the year he had virtually finished two other papers: "A Preliminary Appraisal of the Physiographic History of Horsehead Creek in the Vicinity of 39FA65" (with Jack T. Hughes), and "Analysis of the Vertebrate Fossil Fauna of the Canyon Ferry Reservoir Area."

Throughout the field season White enjoyed congenial relationships with members of other Government agencies and with members of educational institutions. Among those from whom material assistance was received are: Harry A. Tourtelot of the United States Geological Survey, J. LeRoy Kay of the Carnegie Museum, Mr. McQuiren, geologist for the Bureau of Reclamation at the Boysen project, and Roy Austin, Superintendent of Public Schools at Townsend, Mont. Also the work was materially expedited by the many forest rangers who placed the facilities of their stations at the convenience of the party.

As in previous years, a number of student assistants were employed as members of the various field parties. Robert L. Hall and Warren L. Wittry were with the Cooper party from July 1 to September 4 and August 14, respectively. Gordon F. McKenzie joined the same party on August 1 and remained with it until September 4. John C. Donohoe was with the White party July 1 to 31, while Ernest L. Lundelius, Jr., accompanied it from July 1 to September 4. Dorothy E. Fraser was with the Cooper party during the month of August in the capacity of a special consultant. Neil J. Isto joined the Wheeler party on June 2 and was in the field at the close of the year.

Oklahoma.—Work in Oklahoma consisted of both surveys and

excavation. At the beginning of the year David J. Wenner, Jr., field assistant, was making a reconnaissance of the area to be flooded by the Tenkiller Ferry Reservoir on the Illinois River in the eastern part of the State. That work was completed on July 27 and the party moved to the Canadian Reservoir project on the Canadian River. Reconnaissance of that area was finished on August 17, when attention was turned to the adjacent Onapa project on the North Canadian. The survey there was completed on September 3. Within the 3 basins, 104 sites were found, 38 in Tenkiller Ferry, 41 in the Canadian, and 25 in Onapa. The work in Tenkiller Ferry demonstrated that what were presumed to be mounds, actually are natural knolls on flood plains and terraces, and all the sites present are village or camp remains. Those in the other two areas are also mainly village sites representing both historic and prehistoric cultures. In passing it should be stated that the Canadian and Onapa are two of three smaller alternate projects proposed to take the place of the larger Eufaula Reservoir. The third in the group, the Gaines, still remains to be surveyed. Should the single Eufaula project eventually be carried through instead of the three smaller ones, very little additional field work will be required to determine the archeological manifestations involved. It is known that there are a number of mounds that lie outside the boundaries of the smaller reservoirs but which would fall within the maximum pool of the Eufaula. Mr. Wenner was aided in his work by William Mayer-Oakes and Robert Shalkop, student assistants.

The excavations were at the Norman site in the Fort Gibson Reservoir basin on the Grand (Neosho) River near Wagoner. Earlier work by the University of Oklahoma had shown that the extensive village and mound group located there belonged to a Spiro-type culture and raised the possibility that the flooding of the largest double mound, which had never been excavated, would represent the loss of as important information and material as had the destruction of the famous Spiro mounds in the adjacent county. When Dr. Robert E. Bell of the Department of Anthropology of the University of Oklahoma reached the site in July he found that nearly all the village area and all mounds, with the exception of the largest double unit, had been removed by the bulldozers of the construction contractor. Even the large double unit had been damaged. The western periphery had been cut away and the smaller mound had been cut down several feet. With the assistance of the Engineers Dr. Bell was able to stop the operations so that archeological work could be done. During July and the first 2 weeks in August the University of Oklahoma field session under Bell excavated portions of several house sites still surviving south of the larger mound. On

August 17, under the sponsorship of the River Basin Surveys, he began excavation of the large double mound by cutting a trench across the saddle between the two parts of the unit. The southern face of the trench was then carried forward toward the larger mound. Joseph R. Caldwell joined Bell on August 19 and they decided that neither the available time nor funds would permit the customary method of cutting forward with a continuous vertical face. Accordingly, a 10-foot trench was driven through the north-south axis of the mound to reach its base and to obtain a complete profile. The work continued until September 22. Surprisingly, the mound yielded very few specimens. Potsherds and artifacts were scarce throughout its various levels. It was learned, however, that its main portion was composed of six superimposed platforms which probably had been the placements for public buildings, although no complete post-hole patterns were discovered. The summit of the fifth stage above the base had been divided into two nearly equal areas by a single row of posts, and the entire level gave evidence of a severe conflagration in prehistoric times. Four human burials were found in the top level, but they were in such an advanced stage of decomposition that little remained to indicate their character. A number of glass beads in the same level suggests a historic contact in the final days of occupation. The results of the digging indicated that no additional work was required at the Norman site. During the course of the investigations there, however, another site was located which appears to be an important one, and it was recommended that further efforts in the Fort Gibson area be concentrated there.

Red River of the North Basin.—Between August 27 and October 29, 1948, Richard P. Wheeler, archeologist, investigated four Corps of Engineers reservoir areas in the Red River of the North Drainage Basin: the Homme Reservoir, under construction on the South Branch of the Park River, the proposed Pembina River and Tongue River Reservoirs, in northeastern North Dakota; and the proposed Orwell Reservoir, on the Ottertail River, in west-central Minnesota. In reports on those surveys, prepared at the Lincoln office of the River Basin Surveys between November 5 and 19 and issued at Washington, D. C., in December 1948, Wheeler noted the occurrence of sites in the vicinity of the Homme and Orwell Reservoirs but recorded the discovery of only one archeological site in the reservoir areas proper, an occupation site in the Pembina River Reservoir. The finding of bison bones in all four of the reservoir areas indicates that the river valleys were formerly the habitat of bison and perhaps of other large game and were possibly visited by hunting bands in prehistoric and historic times. It was recommended that rechecks be made at the Homme Reservoir, following the clearing of timber and underbrush,

and at the Pembina River and Orwell Reservoirs, at the time of the construction of the dams, in order to make sure that no archeological remains were overlooked.

Texas.—The River Basin Surveys continued to operate throughout the year from the base and headquarters supplied by the Department of Anthropology at the University of Texas, Austin, Tex. Surveys were begun and carried to completion in five Corps of Engineers reservoirs.

Robert L. Stephenson, archeologist, left Austin at the beginning of the fiscal year and went to Fort Worth where he conferred with the Engineer in Charge, Fort Worth Suboffice, Corps of Engineers, preparatory to starting surveys of four reservoir basins on the upper branches of the Trinity River.

During July he completed investigations at the Benbrook Reservoir on the Clear Fork of the Trinity River in Tarrant County and at the Grapevine Reservoir on Denton Creek in Tarrant and Denton Counties. No sites were found in the Benbrook basin and only 10, none of which require further investigation, were noted at Grapevine. In addition he made a 2-day reconnaissance in the areas of the Lavon Reservoir on the East Fork of the Trinity River and Garza–Little Elm Reservoir on the Elm Fork of the same stream. On the latter trip R. K. Harris, Rex Housewright, and Lester Wilson, of the Dallas Archeological Society, took him to sites that they had previously located in the two areas.

On August 1, Mr. Stephenson accompanied Drs. Gustav A. Cooper and A. R. Loeblich, Jr., of the United States National Museum, and Robert Stark of Grapevine, Tex., to the vicinity of Bridgeport, Wise County, to collect invertebrate fossils. He also visited the Whitney Reservoir on the Brazos River, Hill County, and collected mollusks, needed to check previous identifications, from several archeological sites. From there he went to the Texarkana Reservoir on the Sulphur River, Bowie County, for the purpose of gathering information regarding the dates of construction and of determining the necessary time and extent of a survey for that basin. During the month he also completed an intensive survey of the Garza–Little Elm basin where he noted 27 sites, 7 of which were recommended for further examination, and started investigations at the Lavon project. The latter continued until September 17 and during the progress of the work he made test excavations at two sites. The survey located 25 sites, of which 8 have been recommended for more intensive investigations. Both in the excavations and the survey he was greatly assisted by the members of the Dallas Archeological Society and on September 10 spoke before a meeting of that organization. On September 18 he started a survey of the San Angelo Reservoir area on the North Concho

River in Tom Greene County, which was finished on October 10. Only 13 small sites were located there, and as similar material is available elsewhere no further work was recommended for the basin.

Except for several short trips, Mr. Stephenson spent the remainder of the fiscal year at the headquarters in Austin analyzing the material collected and preparing reports on the summer's surveys. He went to Lincoln, Nebr., in November for the purpose of studying the field and laboratory methods being used by the Missouri Basin group and while there attended sessions of the Sixth Conference for Plains Archeology and was appointed to the Committee on Archeological Nomenclature. From January 2 to 7, he revisited the upper Trinity River area to investigate reports of additional material having been found there. Papers prepared by Stephenson during the months in the laboratory are: "Archeological Survey of McGee Bend Reservoir," which was published in volume 19 of the Bulletin of the Texas Archeological and Paleontological Society; "Archeological Survey of the Lavon and Garza–Little Elm Reservoirs," to be published in volume 20 of the same journal; "A Note on Some Large Pits in Certain Sites near Dallas, Texas," printed in American Antiquity, vol. 15, No. 1; a revision of his earlier report on the Whitney Reservoir which was mimeographed and distributed by the Washington office in April; and preliminary appraisals on the Benbrook, Grapevine, Garza–Little Elm, and San Angelo surveys. He also wrote a summary statement covering the results of the River Basin Surveys from their inception in 1947 to June 30, 1949, and prepared a summary and table of the culture sequences and their relationships in the Texas area as they had been worked out up to that date.

Results of the year's investigations established a number of facts. In the survey of the Garza–Little Elm basin it was found that the remains include key sites for the determination of the cultural sequences in the area east of that known to have been inhabited by groups classified as the Henrietta Focus and west of the known Caddoan area. Similar sites have not been observed elsewhere. Very little is known of the cultural sequences involved in the area drained by the three forks of the Trinity River. The eight sites in the Lavon basin recommended for more intensive examination are believed to hold the answer to the problem of developments in the western border of the Caddo area. At least one new culture remains to be defined and described from the excavation of those sites. Furthermore, the material from them should shed much light on the interrelation between the cultures represented there and those to the east and west.

Cooperating institutions.—Numerous State and local institutions cooperated with the River Basin Surveys throughout the year and made a definite contribution to the progress of the program. The

Universities of Nebraska, Oklahoma, Oregon, and Texas provided space for field offices and laboratories for regular units of the Surveys, while the Universities of Denver, Colorado, and California, and Western State College of Colorado supplied temporary bases of operations for specific projects. The Universities of California, Oklahoma, Oregon, and Washington joined forces with the Surveys for some reconnaissance work and for the excavations at the Fort Gibson, McNary, and O'Sullivan Reservoirs. In a number of cases responsibility for units in the survey and excavation program was assumed by State and local institutions.

The Museum of Northern Arizona and the University of Arizona did some preliminary survey work, while the San Diego Museum of Man conducted surveys and did some digging in the area of the Davis Dam on the Colorado River between Arizona and Nevada. The University of Arkansas engaged in both reconnaissance and excavations in the area of Bull Shoals Reservoir in that State. The California Archeological Survey of the University of California conducted excavations at the Pine Flat and Isabella Reservoirs, while the Archeological Surveys Association of Southern California carried on reconnaissance work in that part of the State. The Florida Park Service surveyed the section in northern Florida that will be affected by the Jim Woodruff Dam on the Apalachicola River near Chattahooche and did some digging in a number of sites. The University of Georgia continued its surveys along the Chattahooche and Flint Rivers and conducted excavations at one site in the Allatoona Reservoir on the Etowah River. In Illinois the University of Illinois, the University of Chicago, and the Illinois State Museum furnished information about the extent and character of sites in the basins of 15 reservoir projects proposed for the Illinois River drainage. The Indiana Historical Bureau carried on surveys and did some excavating not only at proposed Federal projects, but at those under State construction as well.

The Museum of Natural History of the University of Kansas made excavations at Kanopolis Reservoir in July and August of 1948 in sites where the rising waters of the reservoir were already encroaching upon the remains. The results of that work were reported on by Dr. Carlyle S. Smith in an article, "Archeological Investigations in Ellsworth and Rice Counties, Kansas," which appeared in American Antiquity, vol. 14, No. 4, April 1949. In June of 1949 the same institution was beginning investigations at the Glen Elder Reservoir with other work planned for the Woodston, Webster, and Cedar Bluff projects in the same region of the Solomon River drainage. In Kentucky the University continued its program of excavations at the Wolf Creek Reservoir on the Cumberland River and at the Dewey

Reservoir on Johns Creek. The University of Missouri and the Missouri Archeological Society again cooperated in making surveys in a number of reservoirs and in excavating sites in the Missouri portion of the Bull Shoals Reservoir and in the Clearwater and Pomme de Terre basins on the Black and Pomme de Terre Rivers, respectively. At the end of the year Montana State University was starting field work at the Canyon Ferry Reservoir on the Missouri River near Townsend, Mont.

The Laboratory of Anthropology of the University of Nebraska was excavating in sites at the Harlan County Reservoir on the Republican River in the southern part of the State at the start of the fiscal year and had returned to the same locality for further activities in June 1949. The work done during the summer of 1948 was described by Dr. John L. Champe, in a report, "White Cat Village," published in American Antiquity, vol. 14, No. 4, April 1949. The Nebraska State Historical Society excavated a number of sites in the Medicine Creek Reservoir area in the early months of the year and in June had a party digging in the Mullen Reservoir area on the Middle Loup River in the north-central part of the State. The University of Nebraska State Museum continued its paleontological and archeological investigations in the Harlan County and Medicine Creek Reservoir areas. One site in the Medicine Creek basin that proved of particular interest because of its implications of considerable antiquity was described in an article, "The Frontier Culture Complex, a Preliminary Report on a Prehistoric Hunter's Camp in Southwestern Nebraska," written by Preston Holder and Joyce Wike and printed in American Antiquity, vol. 14, No. 4, April 1949.

The University of North Dakota and the North Dakota Historical Society cooperated in excavations at the Baldhill Reservoir in the eastern part of the State in the summer of 1948, and toward the close of the fiscal year were preparing for intensive survey work in the Garrison Reservoir on the Missouri River near Sanish, N. Dak. The results of the previous summer's work were discussed by Dr. Gordon W. Hewes in "Burial Mounds in the Baldhill Area, North Dakota," which appeared in the April 1949 issue of American Antiquity, vol. 14, No. 4. The Ohio State Museum did some survey and excavation work. The University of Oklahoma, as previously mentioned, did some digging at the Fort Gibson Reservoir and made independent surveys in other areas. The University of Utah assumed responsibility for surveys at a number of projects in the southwestern corner of that State but at the close of the year had not yet started field work. In Wisconsin, Beloit College made surveys and did some digging in the Black River project.

The various cooperating organizations send progress and completed reports to the River Basin Surveys so that the results of their work may be coordinated with those for the over-all program. In this way the information obtained by them becomes a part of the general record of the River Basin Surveys.

EDITORIAL WORK AND PUBLICATIONS

There were issued one Annual Report and two Publications of the Institute of Social Anthropology as listed below:

Sixty-fifth Annual Report of the Bureau of American Ethnology, 1947–1948. 32 pp.

Institute of Social Anthropology Publ. No. 8. Sierra Popoluca speech, by Mary L. Foster and George M. Foster. 45 pp.

Institute of Social Anthropology Publ. No. 9. The Terena and the Caduveo of southern Mato Grosso, Brazil, by Kalervo Oberg. 72 pp., 24 pls., 4 maps, 2 charts.

The following publications were in press at the close of the fiscal year:

Bulletin 143. Handbook of South American Indians. Julian H. Steward, editor. Volume 5, The comparative ethnology of South American Indians. Volume 6, Physical anthropology, linguistics, and cultural geography of South American Indians.

Miscellaneous publications. List of publications of the Bureau of American Ethnology, with index to authors and titles. Revised to July 30, 1949.

Bulletin 144. The Northern and Central Nootkan tribes, by Philip Drucker.

Institute of Social Anthropology Publ. No. 10. Nomads of the long bow: The Siriono of eastern Brazil, by Allan R. Holmberg.

Institute of Social Anthropology Publ. No. 11. Quiroga: A Mexican Municipio, by Donald D. Brand.

Institute of Social Anthropology Publ. No. 12. Cruz das Almas: A Brazilian village, by Donald Pierson.

Publications distributed totaled 19,660, as compared with 25,037 for the fiscal year 1948.

LIBRARY

Accessions in the library totaled 112 volumes, bringing the total accession record as of June 30, 1949, to 34,719.

ILLUSTRATIONS

During the entire year the work of restoration on the valuable collection of old Indian photographs was continued. Approximately 150 restorations were completed.

The remainder of the time of the illustrator and of his assistant was spent on the regular work of preparation of illustrations and maps for Bureau publications.

ARCHIVES

Research workers and students continued to use the manuscript material and the archives both through personal visits for consultation and by correspondence. A number of manuscripts on the various Iroquoian tribes were loaned to the Library of the American Philosophical Society, Philadelphia, for use of students and research workers in that field. The major task of carding the more important Indian vocabularies has been begun with Indian and English divisions for each. These vocabularies are being arranged so that they can be expanded as new material arrives. Many of the Iroquoian vocabularies collected by James Mooney, Erminnie Smith, and J. N. B. Hewitt, as well as a Natchez vocabulary collected by A. S. Gatchet, have been carded.

Some 5,000 prints and negatives, including both black and white and color, have been made during the year for various purposes. Considerable use was made during the fiscal year of the photographic collections as illustrations for both scientific and commercial purposes. The Walt Disney Studio and Metro-Goldwyn-Mayer have consulted the photographic files for authentic material in making motion pictures dealing with Indian subjects.

COLLECTIONS

Acc. No.	
-------	1 lot of fossils collected by Dr. Theodore E. White, Ernest L. Lundelius, and John C. Donohoe, from 6 locations in the Boysen Reservoir area, Wyoming. River Basin Surveys.
-------	1 lot of fossils collected by Theodore E. White, Ernest L. Lundelius, and John C. Donohoe, from 5 localities within the Canyon Ferry Reservoir area, near Helena, Mont. River Basin Surveys.
181, 218	1 lot of earthenware vessels and other artifacts collected by Dr. Gordon R. Willey in Virú Valley, Department of La Libertad, Perú.
182, 450	24 hand-made silver brooches from the Grand River Indians at Caledonia, Ontario, Canada. Bought by the Bureau from Ephraim Schuyler, Oneida, Wis.
182, 928	1 tobacco pouch and pipe of White Calf, a former chief of the Blackfoot Indians. Bequeathed by Florence Merriam Bailey to the Bureau.
182, 986	1 lot of potsherds collected from Pissaisec, an Algonquian village, near Leedstown, Va., by the late David I. Bushnell, Jr.
179, 533	1 lot of archeological material collected at the Hodges site on Plaza Larga Creek, Quay County, N. Mex., in August 1947 by Herbert W. Dicks as a project of the River Basin Surveys.
179, 773	Indian skeleton from Lake Spring site, Savannah River, Georgia. River Basin Surveys.
180, 455	1 lot of stone artifacts and rejectage collected by Sheldon Judson at various sites in Clay County, N. Mex.

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Acc. No.

------- 1 lot of stone artifacts and potsherds collected by Drs. M. W. Stirling and Gordon R. Willey from a prehistoric shell mound near Monagrillo, Herrera Province, Republic of Panamá, during the 1948 Smithsonian Institution-National Geographic Society Expedition to Panamá.

MISCELLANEOUS

During the year Miss Frances Densmore, Dr. John R. Swanton, and Dr. Antonio J. Waring, Jr., continued as collaborators of the Bureau of American Ethnology.

During the course of the year information was furnished by members of the Bureau staff in reply to numerous inquiries concerning the American Indians of both continents, past and present. Various specimens sent to the Bureau were identified and data on them furnished for their owners.

Respectfully submitted.

M. W. Stirling, *Director.*

Dr. A. Wetmore,
Secretary, Smithsonian Institution.

APPENDIX 6

REPORT ON THE INTERNATIONAL EXCHANGE SERVICE

SIR: I have the honor to submit the following report on the activities of the International Exchange Service for the fiscal year ended June 30, 1949.

The Smithsonian Institution is the official United States agency for the exchange with other nations of governmental, scientific, and literary publications. The International Exchange Service, initiated by the Smithsonian Institution in the early years of its existence for the interchange of scientific publications between learned societies and individuals in the United States and those of foreign countries, serves as a means of developing and executing in part the broad and comprehensive object, "the diffusion of knowledge." It was later designated by the United States Government as the agency for the transmission of official documents to selected depositories throughout the world, and it continues to execute the exchanges pursuant to conventions, treaties, and other international agreements.

The number of packages received for transmission during the year was 840,125, an increase over the previous year of 80,006. The weight of these packages was 796,700 pounds, a decrease of 15,489 pounds. The average weight of the individual package is approximately 15 ounces, as compared with the average of the previous year of 1 pound, 1 ounce—an indication that the various institutions have almost completed shipment of the material that was held during the war. The material received from both foreign and domestic sources for shipment is classified as shown in the following table:

Classification	Packages		Weight	
	Number	*Number*	*Pounds*	*Pounds*
United States parliamentary documents sent abroad	395,696		169,644	
Publications received in return for parliamentary documents		10,019		17,123
United States departmental documents sent abroad	194,080		185,669	
Publications received in return for departmental documents		4,784		12,037
Miscellaneous scientific and literary publications sent abroad	206,887		346,532	
Miscellaneous scientific and literary publications received from abroad for distribution in the United States		28,659		65,695
Total	796,663	43,462	701,845	94,855
Grand total	840,125		796,700	

The packages are forwarded either by mail direct to the addresses or by freight to the exchange bureaus of foreign countries. The number of boxes shipped to the foreign exchange bureaus was 3,296, an increase of 189 over the previous year. Of the boxes shipped 650 were for depositories of full sets of United States Government documents furnished in exchange for the official publications of foreign governments for deposit in the Library of Congress. The number of packages forwarded by mail was 155,402.

In spite of the fact that considerable savings in transportation continued to be effected by exporting from Baltimore rather than New York, and in spite of the advantage gained through special arrangements for shipments to Germany, the allotment for transportation was practically exhausted by the end of May 1949. Therefore, it was necessary to curtail shipments sharply during the last month of the fiscal year, and this resulted in a backlog of approximately 146,000 pounds.

Consignments are now forwarded to all countries except Rumania, and efforts are continued to effect exchanges with that country.

FOREIGN DEPOSITORIES OF GOVERNMENTAL DOCUMENTS

The number of sets of United States official publications received by the Exchange Service to be sent abroad in return for the official publications sent by foreign governments for deposit in the Library of Congress is 96 (58 full and 38 partial sets). The Government Book Depot, Rangoon, has been added to the list of full depositories.

DEPOSITORIES OF FULL SETS

ARGENTINA: Dirección de Investigaciones, Archivo, Biblioteca y Legislación Extranjero, Ministerio de Relaciones Exteriories y Culto, Buenos Aires.
AUSTRALIA: Commonwealth Parliament and National Library, Canberra.
NEW SOUTH WALES: Public Library of New South Wales, Sydney.
QUEENSLAND: Parliamentary Library, Brisbane.
SOUTH AUSTRALIA: Public Library of South Australia, Adelaide.
TASMANIA: Parliamentary Library, Hobart.
VICTORIA: Public Library of Victoria, Melbourne.
WESTERN AUSTRALIA: Public Library of Western Australia, Perth.
AUSTRIA: Administrative Library, Federal Chancellery, Vienna.[1]
BELGIUM: Bibliothèque Royale, Bruxelles.
BRAZIL: Instituto Naçional do Livro, Rio de Janeiro.
BULGARIA: Bulgarian Bibliographical Institute, Sofia.
BURMA: Government Book Depot, Rangoon.[2]
CANADA: Library of Parliament, Ottawa.
MANITOBA: Provincial Library, Winnipeg.
ONTARIO: Legislative Library, Toronto.
QUEBEC: Library of the Legislature of the Province of Quebec.

[1] Changed from National Library of Austria.
[2] Added during year.

CHILE: Biblioteca Nacional, Santiago.
CHINA: Ministry of Education, National Library, Nanking, China.[3]
PEIPING: National Library of Peiping.
COLOMBIA: Biblioteca Nacional, Bogotá.
COSTA RICA: Oficina de Depósito y Canje Internacional de Publicaciones, San José.
CUBA: Ministerio de Estado, Canje Internacional, Habana.
CZECHOSLOVAKIA: Bibliothèque de l'Assemblée Nationale, Prague.
DENMARK: Kongelige Danske Videnskabernes Selskab, Copenhagen.
EGYPT: Bureau des Publications, Ministère des Finances, Cairo.
FINLAND: Parliamentary Library, Helsinki.
FRANCE: Bibliothèque Nationale, Paris.
GERMANY: Offentliche Wissenschaftliche Bibliothek, Berlin.
American Institut, Berlin.[3] [4]
GREAT BRITAIN:
ENGLAND: British Museum, London.
LONDON: London School of Economics and Political Science. (Depository of the London County Council.)
HUNGARY: Library of Parliament, Budapest.
INDIA: National Library, Calcutta.
IRELAND: National Library of Ireland, Dublin.
ITALY: Ministerio della Publica Istruxione, Rome.
JAPAN: National Diet Library, Tokyo.[5]
MEXICO: Secretaría de Relaciones Exteriores, Departamento de Información para el Extranjero, Mexico, D. F.
NETHERLANDS: Royal Library, The Hague.
NEW ZEALAND: General Assembly Library, Wellington.
NORTHERN IRELAND: H. M. Stationery Office, Belfast.
NORWAY: Utenriksdepartmentets Bibliothek, Oslo.[6]
PERU: Sección de Propaganda y Publicaciones, Ministerio de Relaciones Exteriores, Lima.
PHILIPPINES: Bureau of Public Libraries, Department of Education, Manila.[7]
POLAND: Bibliothèque Nationale, Warsaw.
PORTUGAL: Biblioteca Nacional, Lisbon.
RUMANIA: Academia Română, Bucharest.[8]
SPAIN: Cambio Internacional de Publicaciones, Avenida Calvo Sotelo 20, Madrid.
SWEDEN: Kungliga Biblioteket, Stockholm.
SWITZERLAND: Bibliothèque Centrale Fédérale, Berne.
TURKEY: Department of Printing and Engraving, Ministry of Education, Istanbul.
UNION OF SOUTH AFRICA: State Library, Pretoria, Transvaal.
UNION OF SOVIET SOCIALIST REPUBLICS: All-Union Lenin Library, Moscow 115.
UKRAINE: Ukranian Society for Cultural Relations with Foreign Countries, Kiev.[8]
UNITED NATIONS: Library of the United Nations, Geneva, Switzerland.
URUGUAY: Oficina de Canje Internacional de Publicaciones, Montevideo.
VENEZUELA: Biblioteca Nacional, Caracas.
YUGOSLAVIA: Ministère de l'Education, Belgrade.

[3] Suspended.
[4] Held for disposition by Library of Congress.
[5] Changed from National Library of Japan.
[6] Changed from Universitets-Bibliothek.
[7] Changed from National Library.
[8] Suspended.

DEPOSITORIES OF PARTIAL SETS

AFGHANISTAN: Library of the Afghan Academy, Kabul.
BOLIVIA: Biblioteca del Ministerio de Relaciones Exteriores y Culto, La Paz.
BRAZIL:
MINAS GERAES: Directoria Geral de Estatistica em Minas, Bello Horizonte.
BRITISH GUIANA: Government Secretary's Office, Georgetown, Demerara.
CANADA:
ALBERTA: Provincial Library, Edmonton.
BRITISH COLUMBIA: Provincial Library, Victoria.
NEW BRUNSWICK: Legislative Library, Fredericton.
NOVA SCOTIA: Provincial Secretary of Nova Scotia, Halifax.
SASKATCHEWAN: Legislative Library, Regina.
CEYLON: Department of Information, Government of Ceylon, Colombo.[9]
DOMINICAN REPUBLIC: Biblioteca de la Universidad de Santo Domingo, Cuidad Trujillo.
ECUADOR: Biblioteca Nacional, Quito.
GREECE: National Library, Athens.
GUATEMALA: Biblioteca Nacional, Guatemala.
HAITI: Bibliothèque Nationale, Port-au-Prince.
HONDURAS:
Biblioteca y Archivo Nacionales, Tegucigalpa.
Ministerio de Relaciones Exteriores, Tegucigalpa.
ICELAND: National Library, Reykjavik.
INDIA:
BIHAR AND ORISSA: Revenue Department, Patna.
BOMBAY: Undersecretary to the Government of Bombay, General Department, Bombay.
UNITED PROVINCES OF AGRA AND OUDH: University of Allahabad, Allahabad.
WEST BENGAL: Library, West Bengal Legislature, Assembly House, Calcutta.
IRAN: Imperial Ministry of Education, Tehran.
IRAQ: Public Library, Baghdad.
JAMAICA: Colonial Secretary, Kingston.
LIBERIA: Department of State, Monrovia.
MALAYA: Federal Secretariat, Federation of Malaya, Kuala Lumpur.[10]
MALTA: Minister for the Treasury, Valleta.
NEWFOUNDLAND: Department of Home Affairs, St. John's.
NICARAGUA: Ministerio de Relaciones Exteriores, Managua.
PAKISTAN: Chief Secretary to the Government of Punjab, Lahore.
PANAMA: Ministerio de Relaciones Exteriores, Panama.
PARAGUAY: Ministerio de Relaciones Exteriores, Sección Biblioteca, Asunción.
SALVADOR:
Biblioteca Nacional, San Salvador.
Ministerio de Relaciones Exteriores, San Salvador.
SIAM: National Library, Bangkok.
SINGAPORE: Chief Secretary, Government Offices, Singapore.[10]
VATICAN CITY: Biblioteca Apostolica Vaticana, Vatican City, Italy.

[9] Changed from Chief Secretary's Office, Record Department of the Library.
[10] Added during year.

INTERPARLIAMENTARY EXCHANGE OF THE OFFICIAL JOURNAL

There are now being sent abroad 81 copies of the Federal Register and 75 copies of the Congressional Record. This is an increase of 8 copies of the Federal Register and 9 of the Congressional Record over the preceding year. The countries to which these journals are being forwarded are given in the following list:

DEPOSITORIES OF CONGRESSIONAL RECORD AND FEDERAL REGISTER

ARGENTINA:
Biblioteca del Congreso Nacional, Buenos Aires.
Biblioteca del Poder Judicial, Mendoza.[11]
Cámara de Diputados, Oficina de Informacion Parliamentaria, Buenos Aires.
Boletín Oficial de la República Argentina, Ministerio de Justica e Instrucción Pública, Buenos Aires.

AUSTRALIA:
Commonwealth Parliament and National Library, Canberra.
NEW SOUTH WALES: Library of Parliament of New South Wales, Sydney
QUEENSLAND: Chief Secretary's Office, Brisbane.
WESTERN AUSTRALIA: Library of Parliament of Western Australia.

BRAZIL:
Biblioteca da Camera dos Deputados, Rio de Janeiro.[12]
Imprensa Nacional, Rio de Janeiro.[11]
AMAZONAS: Archivo, Biblioteca e Imprensa Publica, Manáos.
BAHIA: Governador do Estado da Bahia, São Salvador.
ESPIRITO SANTO: Presidencia do Estado do Espirito Santo, Victoria.
RIO GRANDE DO SUL: Imprensa Oficial do Estado, Porto Alegre.
SERGIPE: Biblioteca Publica do Estado de Sergipe, Aracajú.
SÃO PAULO: Imprensa Oficial do Estado, São Paulo.

BRITISH HONDURAS: Colonial Secretary, Belize.

CANADA:
Library of Parliament, Ottawa.
Clerk of the Senate, Houses of Parliament, Ottawa.

CUBA:
Biblioteca del Capitolio, Habana.
Biblioteca Publica Panamericana, Habana.[13]
House of Representatives, Habana.[14]

EGYPT: Ministry of Foreign Affairs, Egyptian Government, Cairo.[13]

EL SALVADOR: Library, National Assembly, San Salvador.

FRANCE:
Bibliothèque Assemblée Nationale, Paris.[15]
Bibliothèque, Consèil de la Republique.
Publiques de l'Institute de Droit Compare, Université de Paris, Paris.[11]
Service de la Documentation Etrangère, Assemblée Nationale, Paris.[13] [14]

[11] Federal Register only.
[12] Changed from Biblioteca do Congresso Nacional.
[13] Congressional Record only.
[14] Added during year.
[15] Changed from Bibliothèque, Chambre des Députés.

GERMANY: Der Bayrische Landtag, Munich.[16] [17]
GREAT BRITAIN:
House of Commons Library, London.[16] [17]
Printed Library of the Foreign Office, London.
GREECE: Library, Greek Parliament, Athens.
GUATEMALA: Biblioteca de la Asamblea Legislativa, Guatemala.
HAITI: Bibliothèque Nationale, Port-au-Prince.
HONDURAS: Biblioteca del Congreso Nacional, Tegucigalpa.
INDIA:
Civil Secretariat Library, Lucknow, United Provinces.[18]
Legislative Assembly Library, Lucknow, United Provinces.
Legislative Department, Simla.
INDONESIA: Provisional Parliament of East-Indonesia, Macassar, Celebes.[17]
IRELAND: Dail Eireann, Dublin.
ITALY:
Biblioteca Camera dei Deputati, Rome.[17]
Biblioteca del Senato della Republica, Rome.[17]
European Office, Food and Agriculture Organization of the United Nations, Rome.[17] [18]
International Institute for the Unification of Private Law, Rome.[18]
MEXICO:
Dirección General de Información, Secretaría de Gobernación, Mexico, D. F.
Biblioteca Benjamin Franklin, Mexico, D. F.
AGUASCALIENTES: Gobernador del Estado de Aguascalientes, Aguascalientes.
CAMPECHE: Gobernador del Estado de Campeche, Campeche.
CHIAPAS: Gobernador del Estado de Chiapas, Tuxtla Gutierrez.
CHIHUAHUA: Gobernador del Estado de Chihuahua, Chihuahua.
COAHUILA: Periódico Oficial del Estado de Coahuila, Palacio de Gobierno, Saltillo.
COLIMA: Gobernador del Estado de Colima, Colima.
DURANGO: Gobernador Constitucional del Estado de Durango, Durango.
GUANAJUATO: Secretaría General de Gobierno del Estado, Guanajuato.
GUERRERO: Gobernador del Estado de Guerrero, Chilpancingo.
JALISCO: Biblioteca del Estado, Guadalajara.
LOWER CALIFORNIA: Gobernador del Distrito Norte, Mexicali.
MÉXICO: Gaceta del Gobierno, Toluca.
MICHOACÁN: Secretaría General de Gobierno del Estado de Michoacán, Morelia.
MORELOS: Palacio de Gobierno, Cuernavaca.
NAYARIT: Gobernador de Nayarit, Tepic.
NUEVO LEÓN: Biblioteca del Estado, Monterrey.
OAXACA: Periódico Oficial, Palacia de Gobierno, Oaxaca.
PUEBLA: Secretaría General de Gobierno, Puebla.
QUERÉTARO: Secretaría General de Gobierno, Sección de Archivo, Querétaro.
SAN LUIS POTOSÍ: Congreso del Estado, San Luis Potosí.
SINALOA: Gobernador del Estado, de Sinaloa, Culiacán.
SONORA: Gobernador del Estado de Sonora, Hermosillo.
TABASCO: Secretaría de Gobierno, Sesión 3a, Ramo de Prensa, Villahermosa.

[16] Congressional Record only.
[17] Added during year.
[18] Federal Register only.

MEXICO—Continued
TAMAULIPAS: Secretaría General de Gobierno, Victoria.
TLAXCALA: Secretaría de Gobierno del Estado, Tlaxcala.
VERACRUZ: Gobernador del Estado de Veracruz, Departmento de Gobernación y Justicia, Jalapa.
YUCATÁN: Gobernador del Estado de Yucatán, Mérida.
NETHERLANDS: Koninklijke Bibliotheek, The Hague.[19] [20]
NEW ZEALAND: General Assembly Library, Wellington.
NORWAY: Library of the Norwegian Parliament, Oslo.[19]
PERU: Cámara de Diputados, Lima.
POLAND: Ministry of Justice, Warsaw.[20]
SPAIN: Diputacion de Navarra, San Sebastian.
SWITZERLAND: Bibliothèque, Bureau International du Travail, Geneva.[20]
Library, United Nations, Geneva.[19]
UNION OF SOUTH AFRICA:
CAPE OF GOOD HOPE: Library of Parliament, Cape Town.
TRANSVAAL: State Library, Pretoria.
URUGUAY: Diario Oficial, Calle Florida 1178, Montevideo.
VENEZUELA: Biblioteca del Congreso, Caracas.

FOREIGN EXCHANGE AGENCIES

Exchanges are sent to all countries except Rumania. The countries listed are those to which shipments are forwarded by freight. To other countries not appearing on the list, packages are forwarded by mail.

LIST OF AGENCIES

AUSTRIA: Austrian National Library, Vienna.
BELGIUM: Service des Échanges Internationaux, Bibliothèque Royale de Belgique, Bruxelles.
CHINA: Bureau of International Exchange, National Central Library, Nanking.
CZECHOSLOVAKIA: Bureau des Échanges Internationaux, Bibliothèque de l'Assemblée Nationale, Prague 1–100.
DENMARK: Institut des Échanges Internationaux, Bibliothèque Royale, Copenhagen K.
EGYPT: Government Press, Publications Office, Bulaq, Cairo.
FINLAND: Delegation of the Scientific Societies of Finland, Kasärngatan 24, Helsinki.
FRANCE: Service des Échanges Internationaux, Bibliothèque Nationale, 58 Rue de Richelieu, Paris.
GERMANY: Offentliche Wissenschaftliche Bibliothek, Berlin.[21] [22]
German Central Committee for Distribution of Cultural Materials, Stuttgart.[21] [23]
GREAT BRITAIN AND IRELAND: Wheldon & Wesley, 83/84 Berwick Street, London, W. 1.
HUNGARY: Hungarian Libraries Board, Ferenciektere 5, Budapest, IV.
INDIA: Superintendent of Government Printing and Stationery, Bombay.
ITALY: Ufficio degli Scambi Internazionali, Ministero della Publica Istruxione, Rome.

[19] Added during year.
[20] Federal Register only.
[21] Distribution under supervision of Department of the Army.
[22] For all sectors of Berlin and Russian Zone.
[23] For American, British, and French Zones.

JAPAN: International Exchange Service, National Library of Japan, Uyeno Park, Tokyo.[24]

NETHERLANDS: International Exchange Bureau of the Netherlands, Royal Library, The Hague.

NEW SOUTH WALES: Public Library of New South Wales, Sydney.

NEW ZEALAND: General Assembly Library, Wellington.

NORWAY: Service Norvégien des Échanges Internationaux, Bibliothèque de l'Université Royale, Oslo.

PALESTINE: Jewish National and University Library, Jerusalem.[24]

PHILIPPINES: Bureau of Public Libraries, Department of Education, Manila.

POLAND: Service Polonais des Échanges Internationaux, Bibliothéque Nationale, Warsaw.

PORTUGAL: Secção de Trocas Internacionais, Biblioteca Nacional, Lisbon.

QUEENSLAND: Bureau of Exchanges of International Publications, Chief Secretary's Office, Brisbane.

RUMANIA: Ministère de la Propagande Nationale, Service des Échanges Internationaux, Bucharest.[25]

SOUTH AUSTRALIA: South Australian Government Exchanges Bureau, Government Printing and Stationery Office, Adelaide.

SPAIN: Junta de Intercambio y Adquisición de Libros y Revistas para Bibliotecas Públicas, Ministerio de Educación Nacional, Avenida Calvo Sotelo 20, Madrid.

SWEDEN: Kungliga Biblioteket, Stockholm.

SWITZERLAND: Service Suisse des Échanges Internationaux, Bibliothèque Centrale Fédérale, Palais Fédérale, Berne.

TASMANIA: Secretary to the Premier, Hobart.

TURKEY: Ministry of Education, Department of Printing and Engraving, Istanbul.

UNION OF SOUTH AFRICA: Government Printing and Stationery Office, Cape Town, Cape of Good Hope.

UNION OF SOVIET SOCIALIST REPUBLICS: International Book Exchange Department, Society for Cultural Relations with Foreign Countries, Moscow, 56.

VICTORIA: Public Library of Victoria, Melbourne.

WESTERN AUSTRALIA: Public Library of Western Australia, Perth.

YUGOSLAVIA: Section des Échanges Internationaux, Ministère des Affaires Étrangères, Belgrade.

Respectfully submitted.

D. G. WILLIAMS, *Chief.*

Dr. A. WETMORE,
Secretary, Smithsonian Institution.

[24] Distribution under supervision of Department of the Army.
[25] Shipments suspended.

APPENDIX 7

REPORT ON THE NATIONAL ZOOLOGICAL PARK

SIR: I have the honor to submit the following report on the operations of the National Zoological Park for the fiscal year ended June 30, 1949.

The improved economic conditions were reflected in satisfactory developments at the Zoo during the year. The animal collection was gradually improved by obtaining rare or otherwise desirable animals to fill available cages, and personnel recruitment and training progressed satisfactorily, although it was not possible to fill all vacancies. With increased man power and more materials available, progress was made in taking care of the most needed repairs, and minor improvements were completed.

As of June 30, 1949, there were 3,724 specimens in the collection, an increase of 927 over the previous year. These represented 755 species, an increase of 65. Not only was the collection increased in size, but the quality was improved by the addition of animals that are not well known, thereby adding to its educational value.

The National Zoological Park renders a variety of services to the American public. Besides the animal exhibits and the providing of an attractive recreation area, valuable opportunities are offered for students of biology, particularly vertebrate zoology, as well as for artists, photographers, writers, and research workers—utilizing methods of research that do not endanger the welfare of the animals or of the public. Other direct services are answering in person, by phone, mail, and telegraph, questions regarding animals, their care and transportation; the furnishing of information to other zoos and private and public agencies regarding structures for keeping and housing animals; and cooperation with other agencies of the Federal, State, and municipal governments in research work.

THE EXHIBITS

Animals for the collection are acquired by gift, deposit, purchase, exchange, births and hatchings, and are removed by return of specimens on deposit, exchange, or death. Although depositors are at liberty to remove the specimens that they place in the Zoo, many leave the specimens for the rest of their lives.

As in any colony of living things, there is a steady turn-over, so that the exhibits are constantly changing. Thus, the inventory list of specimens in the collection on June 30 of each year does not show all the kinds of animals that were exhibited during the year; sometimes creatures of outstanding interest at the time they were shown are no longer in the collection at the time the list is prepared.

ACCESSIONS

A great many interesting shipments have been received from abroad. The Navy Medical Research Unit No. 3 sent through Lt. Robert E. Kuntz a large collection of Egyptian reptiles, including a number of species that the Zoo has never had before. The Institute of Scientific Research, Madagascar, sent by air a group of leopard chameleons, some *Zonosaurus* lizards, and two Dumeril's boas. The San Diego Zoological Society presented a beautiful specimen of the spectacled bear. The Army Medical Research Center Laboratory in Malaya sent through Maj. Robert Traub an interesting collection, including two striking bamboo rats and eight different species of tree rats, none of which had been exhibited heretofore. From the Zoological Society of London was received an extensive shipment, including 4 Chinese water deer, a kusimanse, some rare birds, and 2 of the rare Meller's chameleons.

Dr. Guillermo Mann of the University of Santiago, Santiago, Chile, sent specimens of Gay's frog and the unusual Bibron's "toad" frog, as well as three abrocomas, a rodent seldom seen in captivity. Pat Putnam sent from the Belgian Congo chameleons and francolins. Capt. John Miller of Panagra Airlines, Perú, shipped to the Zoo its first pair of the rare pigmy marmosets, smallest of all the monkeys.

Among the outstanding receipts through purchases or exchanges were an African two-horned rhinoceros, a pair of wombats, a king cormorant, a trio of kelp geese, orang-utans and chimpanzees. The latter are to replace the stock that some years ago was destroyed by an epidemic.

William T. Miller, after resigning from the Army, spent some time in Panamá and sent several shipments including a pigmy anteater and a great rufous motmot. Dr. A. Reventlow of the Zoological Garden at Copenhagen, Denmark, presented to the Zoo its first pair of whooper swans. From the Zoo in Rotterdam, Holland, were received a king cobra and some ruffs. In an air shipment from Australia came reptiles of more than a dozen species, including the carpet python, diamond python, and a number of rare lizards and turtles.

DEPOSITORS AND DONORS AND THEIR GIFTS

(Deposits are marked*)

Aiken, Jesse E., Chevy Chase, Md., opossum (young in pouch).
Allen, Miss Joyce, Washington, D. C., sparrow hawk.
Animal Rescue League, Washington, D. C., muskrat.
Army Medical Research, Washington, D. C., slow loris.
Arutsaw, Pvt. V. C., and Harp, Pvt. W. W., Washington, D. C., woodchuck.
Ayars, James W., Silver Spring, Md., parrot.
Balster, Joseph, Washington, D. C., festive parrot.
Barbour, Charles, Sunnybrook, Md., fence lizard.
Barker, J. M., Moyock, N. C., timber rattlesnake.
Beck, L. V., Bethesda, Md., 2 zebra finches.
Bernstein, Edward, Washington, D. C., white-throated capuchin.*
Bittenbender, J. C., Arlington, Va., flying squirrel.
Bitting, Maurice, Cheverly, Md., raccoon.
Boswell, Mrs. May, Washington, D. C., green heron.
Bowen, Mrs. Raymond J., Washington, D. C., mouse.
Bratter, Miss J., Washington, D. C., Pekin duck.
Brodess, Miss D., Washington, D. C., ring-necked dove.
Brommer, K. M., Minneapolis, Minn., ferret.
Burford, Captain, Falls Church, Va., opossum.
Burke, Mrs. J. O., Washington, D. C., domestic white rabbit.
Butler, H. M., Washington, D. C., alligator.
Carrick, W. E., Capitol Heights, Md., skunk.
Carroll, Robert, Arlington, Va., black widow spider.
Carter, H. E., Alexandria, Va., ruby-throated humming bird.
Catskill Game Farm, Inc., Catskill, N. Y., pigtail macaque monkey.
Celia, Dominick, Bethesda, Md., sparrow hawk.
Chamberlin, Donald, Kenwood, Md., sparrow hawk* and screech owl.*
Claxen, Charles W., Chevy Chase, Md., 7 golden hamsters.
Clift, Miss Annie M., Bethesda, Md., Pekin duck.
Collins, John F., Washington, D. C., 4 Pekin ducks.
Colvin, Master E., Washington, D. C., red fox.
Cook, Harry, Washington, D. C., alligator.
Cool, Leon D., and Gascoyne, Rodney, Washington, D. C., whistling swan.*
Coolidge, Belle, Washington, D. C., Pekin duck.
Cooper, John, Washington, D. C., 2 raccoons.
Coppel, Miss Marcia, Washington, D. C., Pekin duck.
Corrigan, Miss Myrtle, Washington, D. C., painted bunting.
Corver, H. O., Washington, D. C., opossum.
Cunningham, J. Francis, Arlington, Va., 2 flying squirrels.
Dale, Mr. and Mrs. Martin B., Arlington, Va., 3 grass parakeets (albino).
Davis, L. W., Arlington, Va., 2 eastern skunks.
Davis, Malcolm, Washington, D. C., American crow and 2 black vultures.
Davis, Thomas M., Philadelphia, Pa., 3 Ameiva lizards, 8 blue honeycreepers, 18 yellow atelopus.
Decatur, Miss Edna, Washington, D. C., brown thrasher.
Dent, W. W., Washington, D. C., ground hog.
Denton, J. O., Alexandria, Va., skunk.
Messrs. DePrato, Fiedler, and Davis, Washington, D. C., snapping turtle.
Detmer, J., Washington, D. C., Pekin duck.

Donovan, Daniel J., Washington, D. C., yellow-naped parrot.
Douglas, F., Washington, D. C., raccoon.
Douglas, Floyd G., (address unknown), American badger.
Dour, John, Abington, Va., hog-nosed snake.
DuBuy, Dr. H. G., Berwyn, Md., common goat.
Dudley, Dr. A., Bethesda, Md., 5 opossums.
Duetermann, Capt. W. V., Washington, D. C., Pekin duck.
Dumming, Bill, Chevy Chase, Md., snapping turtle.
Eleazec, J. M., Clemson, S. C., black vulture.
Ellwanger, Mrs. Chas., Vienna, Va., screech owl.
Ennes, Richard, Washington, D. C., 2 great horned owls.*
Esfandiary, Mr., Washington, D. C., 6 white mice.
Evans, Jim, (address unknown), hog-nosed snake and mole snake.
Finely, Dr. H. E., Washington, D. C., bullfrog.
Finnegan, Hugh L., Silver Spring, Md., 11 opossums.
Flick, Carlton R., Mt. Rainier, Md., 5 opossums.
Ford, Clifford, Shady Side, Md., spider monkey.
Franciscan Monastery, Washington, D. C., bleeding-heart dove.
Freret, Mrs. J. P., Alexandria, Va., flying squirrel.
Friday, David L., Bethesda, Md., eastern gray squirrel.
Gatti, Mrs. S. A., Washington, D. C., 2 grass parakeets, 2 Java sparrows, 9 canaries.
Gilbert, Paul, Washington, D. C., double yellow-headed parrot.
Golden, Helen, Sarasota, Fla., Indian rock python.*
Goldwyn, Ronald J., Alexandria, Va., 2 Pekin ducks.
Griffin, D. A., Washington, D. C., barn owl.
Guy, R. L., Arlington, Va., 2 Pekin ducks.
Haas, Mrs. F., Washington, D. C., canary.
Hager, Lester H., Arlington, Va., Florida gallinule.
Haggerty, Miss Irene, Washington D. C., eastern robin.
Handley, Charles, Washington, D. C., 2 gray foxes.
Harriman, D., Washington, D. C., domestic rabbit.
Harris, Van T., Ann Arbor, Mich., least weasel.
Harwall, Master Michael, Arlington, Va., barred owl.
Henderson, Genevieve, Chevy Chase, Md., horned lizard.
Henshaw, Bill, Washington, D. C., alligator.
Heslep, C., Silver Spring, Md., eastern robin.
Hickman, Jean H., Washington, D. C., 4 eastern gray squirrels.
Hoffman, Dr. Paul, Washington D. C., 2 opossums.
Hogan, Mrs. Henry, Washington, D. C., eastern robin.
Holmes, Mrs. G., Washington, D. C., northern raven.
Householder, Vic. H., Phoenix, Ariz., 4 western green toads, collared peccary.
Howard, Dr. Walter E., O'Neals, Calif., 4 digger-pine pocket mice, 2 San Joaquin pocket mice, 7 California harvest mice, 16 Gambel white-footed mice, 12 California meadow mice.
Ingham, Rex, Ruffin, N. C., yellow-naped parrot,* red-blue-and-yellow macaw,* yellow-and-blue macaw,* Mexican green macaw.*
Ingles, Lloyd G., Fresno State College, Fresno, Calif., mountain beaver, golden-mantle ground squirrel, San Joaquin kangaroo rat, 3 lodgepole-pine chipmunks, California white-footed mouse, San Joaquin antelope ground squirrel, Heerman kangaroo rat, California pocket mouse, Tejon pocket mouse, Merriam's kangaroo rat, 3 small-faced kangaroo rats, southwestern white-footed mouse, 4 pack rats (mother and 3 babies).

Institut de Recherche Scientifique, Madagascar, 7 leopard chameleons, 2 Dumeril's boas, 3 lizards.
Jackson, William, Washington, D. C., barn owl.
James, Clayton, Landover, Md., purple gallinule, 10 West Indian mourning doves,* button quail,* spotted salamander.
James, Cloyd, Purcellville, Va., 2 barn owls.
Jenkins, R. S., Buenavista, Va., gray fox, skunk, Geoffroy's marmoset.
Johnson, Duane, W., Washington, D. C., Pekin duck.
Johnson, F. R., Eustis, Fla., coral snake, eastern diamond-backed rattlesnake.
Johnson, L., Washington, D. C., rhino beetle.
Jones, J. M., Silver Spring, Md., 45 white mice.
Keegan, Capt. Hugh L., Manila, P. I., monitor, reticulated python, 3 river snakes, 2 akamatahs, 4 Habu vipers.
King, Charles E., Washington Grove, Md., barn owl.
Komsa, John, Washington, D. C., raccoon.
Koon, E. S., Asheville, N. C., alligator.
Krouse, Mrs. A. F., Washington, D. C., eastern robin.
Kuntz, Lt. R. E., Cairo, Egypt, 4 Roger's whipsnakes, 7 sand vipers, 11 Egyptian colubers, 4 dassas, javeline boa, 2 desert warals, Egyptian leaf-nosed snake, "Fish of the Sand," 3 dabbs (or dhabs), mucronate sand lizard, 3 "Father of Eyes" (cat-eyed snakes), 3 horned vipers, 3 gharibas, 4 aekams, 5 Egyptian cobras, 3 pale agamas, chameleon, gecko or white "bors," 4 Egyptian spiny mice, 6 pyramid gerbills, 7 Egyptian sand lizards, Egyptian snails, 16 Egyptian skinks, "Father of Stripes."
LaGarde, B. L., Frederick, Md., 2 garter snakes, copperhead snake.
Lane, Dick and Elaine, Washington, D. C., domestic rabbit.
Lee, Emmett L., Alexandria, Va., 2 barred owls.
Leonard, Diane Ruth, Washington, D. C., hog-nosed snake.
Linkins, Mrs. C. S., Washington, D. C., Pekin duck.
Lionheart, Mrs. Louis, Washington, D. C., eastern gray squirrel.
Lipscomb, Mrs. Thomas, Washington, D. C., Pekin duck.
Lohren, Harold, black muskrat.
Low, S. H., Gaithersburg, Md., alligator.
Lucas, C. S., East Riverdale, Md., Pekin duck.
Lyons, James N., Washington, D. C., Pekin duck.
MacCracken, E., Washington, D. C., red fox.
Mann. Dr. Guillermo, Santiago, Chile, 3 abrocomas, 3 Gay's frogs, 53 Bibron's "toad" frogs.
Marshall, Master Fred, Washington, D. C., snapping turtle.
Marshall, L. M., Washington, D. C., woodchuck or ground hog.
McBride, Gordon W., Chevy Chase, Md., domestic rabbit.*
McDermott, Mrs. Jack C., Washington, D. C., yellow-headed parrot.*
McDonald, Master Earling, Takoma Park, Md., raccoon.
Meems Bros. & Ward, Oceanside, L. I., cheetah.*
Meininger, J. L., Chevy Chase, Md., Pekin duck.
Meininger, Paul, Bethesda, Md., 2 Pekin ducks.
Miller, Capt. John, Lima, Peru, 2 Pygmy marmosets.
Mills, John, Washington, D. C., 10 common newts.
Mills, L. W., Chevy Chase, Md., opossum.
Moats, Mr. and Mrs. Edwin R., Hillside, Md., 4 pileated woodpeckers.
Moebs, Noel, Chevy Chase, Md., barred owl.
Monahan, Edward P., Trinidad, B. W. I., boa constrictor.
Moulton, Gladys, Washington, D. C., Cumberland terrapin.*

National Capitol Park Service, Washington, D. C., copperhead snake, pilot snake.
Naval Research Medical Center, Bethesda, Md., Javan macaque,* 16 East African elephant shrews.*
Nicoson, Keith S., Arlington, Va., skunk.
O'Donnell's Grill, Washington, D. C., alligator.
O'Neill, C. A., Washington, D. C., cockatiel.
O'Neill, Chas. F., Washington, D. C., 2 Pekin ducks.
Ord, Edward, Washington, D. C., 2 angel fish.
Ormsby, A. I., Sydney, Australia, 6 black snakes, 6 black-bellied snakes.
Parker, McRea, Leesburg, Va., pilot snake.
Parko, Kendrick, Arlington, Va., timber rattlesnake.
Parsons, Master Tom, Washington, D. C., snapping turtle.
Paugh, Mrs. B., Bristol, Va., opossum.
Peterson, E. G., Arlington, Va., American common crow.
Philadelphia Zoological Society, Philadelphia, Pa., ocellated turkey,* mallard duck (gift).
Phillips, Chester, and McComb, Robert, Washington, D. C., barred owl.
Preston, J. E., Washington, D. C., lesser white-nosed guenon.*
Putnam, Pat, Belgian Congo, chameleons and francolins.
Randel, Capt. Hugh W., Canal Zone, 3 Galápagos iguanas, Galápagos tortoise.
Reed, R. W., Washington, D. C., cardinal.
Reegan, T. V., Washington, D. C., eastern gray squirrel.*
Rivere, Dr. Luis Howell, Havana, Cuba, hutia.
Robey, J. C., Washington, D. C., golden hamster.
Robinson, George A., McPherson, Kans., coyote.
Rosenberg, Louis, Washington, D. C., Virginia rail.
Rottmund, F. G., Silver Spring, Md., pied-billed grebe.
Rusch, James L., Washington, D. C., rhesus monkey.*
Ryder, Mrs. Stephen, Silver Spring, Md., 3 Pekin ducks.
San Diego Zoological Society, San Diego, Calif., spectacled bear.
Santos, Mrs. J., Washington, D. C., skunk.
Schneider, Mrs. T. F., Dragoon, Ariz., gila monster.
Sharpe, C. J., Takoma Park, Md., Pekin duck.
Shaw, Harry L., Baltimore, Md., Hamadryas baboon.*
Sherwood, Harry, Washington, D. C., domestic rabbit.
Sloan, J. L., Salt Lake City, Utah, 2 ring-billed gulls, 2 badgers.
Smith, Master Dorsey, Clifton, Va., skunk.
Snyder, E. T., Washington, D. C., Pekin duck.
Snyder, Dr. T. E., Beltsville, Md., snapping turtle.
Souder, Harry N., Washington, D. C., brown capuchin.
Spliden, Ronald, Landover, Md., pied-billed grebe.
Springer, Paul, Laurel, Md., gray-cheeked thrush.
Stanley, Misses Jeanne and Mary Ann, Washington, D. C., 2 Pekin ducks.
Steelman, S/Sgt. Carl T., Bolling Field, D. C., woodchuck or ground hog.
Steger, Mrs. Mary E., Falls Church, Va., 2 grass parakeets.
Stevenson, Mrs. Elva Myers, Washington, D. C., rhesus monkey.*
Stinnett, Bob, Cameron, Mont., cinnamon bear.
Stogdhill, Howard, Washington, D. C., Pekin duck.
Stomn, Mrs., Arlington, Va., American crow.*

Strates, J. E., Shows, Inc., Alexandria, Va., lion.
Sturgell, David A., Berwyn, Md., skunk.
Sunday, Richard, Arlington, Va., eastern chipmunk.
Surles, George L., Washington, D. C., Philippine macaque.
Swope, Miss Alice C., Washington, D. C., Pekin duck.
Tolman, Ruel P., Washington, D. C., flying squirrel.
Townsend, Mrs. Thomas, Washington, D. C., 2 domestic rabbits.
Traub, Maj. Robert, Army Medical Center, Malaya, 2 bamboo rats, 2 slow loris, Malayan cat, 2 *Callosciurus nigroviridis*, 2 gray tree rats, 2 large spiny-backed tree rats, 2 Edward's tree rats, 2 Muller's tree rats, 2 rajah tree rats, 2 pencil-tailed tree rats, Bower's tree rat, Whitehead's tree rat.
Treffich's Bird and Animal Co., Inc., New York, N. Y., 3 great gray kangaroos.*
U. S. Fish and Wildlife Service, Patuxent, Md. (through Arnold Nelson), 4 bobwhites, 9 opossums.
U. S. Fish and Wildlife Service, Washington, D. C. (through Leon Cool, Jr.), 2 whistling swans, whistling swan.*
U. S. Fish and Wildlife Service, Willows, Calif. (through Vernon Ekedahl), 10 cackling geese.
U. S. Naval Hospital, Bethesda, Md., Poland-China hog.
U. S. Public Health Service, Bethesda, Md. (through Dr. H. W. Stunkard), golden baboon.
Vevers, Mr. and Mrs. G., London, England, 2 dormice.
Wagner, Mrs. Henry S., Front Royal, Va., 22 canaries.
West, Master David, and Manfuso, Master Bob, Chevy Chase, Md., opossum.
White, Miss Becky, Washington, D. C., opossum.
White, Miss Inez, Washington, D. C., Muscovy duck.
Whitehead, Mrs. Virginia, Washington, D. C., 2 Pekin ducks.
Widham, Mrs. Spencer, Silver Spring, Md., ring-necked pheasant.
Williamson, A. A., Washington, D. C., 6 white cloud mountain fish, 6 zebra fish, 6 head-and-tail-light fish, rio tetra, 2 black tetra, South American catfish.
Williamson, F. S. L., San Diego, Calif., California king snake, 2 glossy snakes, 5 red rattlers, 2 rosy boas, 3 gopher snakes, 2 alligator lizards, Pacific rattler, striped racer.
Wilson, Mrs. Arnold, Washington, D. C., 2 grass parakeets.
Woolls, Wm. P., Alexandria, Va., Pekin duck.
Wright, Jack, and Davis, Harvey, Arlington, Va., red-bellied terrapin.
Young, C. N., Silver Spring, Md., raccoon.
Ziese, A., Washington, D. C., domestic rabbit.
Zoological Society of London, London, England, 4 Chinese water deer, 1 kusimanse, 2 dormice, 6 jackdaws, 2 European jays, 2 purple touracous, 1 plover, and 2 Meller's chameleons.

BIRTHS AND HATCHINGS

MAMMALS

Scientific name	*Common name*	*Number*
Ammotragus lervia	Aoudad	4
Aotus trivirgatus	Owl or night monkey	1
Ateles geoffroyi vellerosus	Spider monkey	1
Axix axis	Axis deer	2
Bibos gaurus	Gaur	1
Bos taurus	English Park cattle	1
Bos taurus	West Highland cattle	1

Scientific name	Common name	Number
Bubalus bubalis	Water buffalo	1
Camelus bactrianus	Bactrian camel	1
Capromys pilorides	Hutia	3
Cephalophus nigrifrons	Black-fronted duiker	1
Cercopithecus aethiops sabaeus	Green guenon	1
Cercopithecus aethiops sabaeus × C. *a. pygerythrus*	Hybrid green guenon × vervet guenon	1
Chinchilla chinchilla	Chinchilla	4
Choeropsis liberiensis	Pigmy hippopotamus	1
Cyclopes didactylus	Pigmy or silky anteater	1
Dama dama	Brown fallow deer	2
Dama dama	White fallow deer	5
Felis concolor × *F. c. patagonica*	Hybrid North American × South American puma	2
Felis tigris	Tiger (Bengal)	5
Giraffa camelopardalis	Nubian giraffe	1
Hippopotamus amphibius	Hippopotamus	1
Hydropotes inermis	Chinese water deer	2
Lama glama guanico	Guanaco	1
Lama pacos	Alpaca	1
Lemur macacao	Acoumba lemur	1
Odocoileus virginianus	Virginia deer	1
Oncifelis geoffroyi	Geoffroy's cat	1
Ovis europaea	Mouflon	1
Phloeomys cumingi	Slender-tailed cloud rat	2
Rattus canus	Tree rat	3
Syncerus caffer	African buffalo	1
Thalarctos maritimus × *Ursus middendorffi*	Hybrid bear	2

BIRDS

Agriocharis ocellata	Ocellated turkey	5
Anas platyrhynchos	Mallard duck	12
Branta canadensis	Canada goose	12
Cairina moschata	Muscovy duck	5
Fulica americana	American coot	10
Gallus gallus	Red jungle fowl	1
Gennaeus leucomelanus	Nepal pheasant	6
Larus novaehollandiae	Silver gull	4
Pavo cristatus	Peafowl	1
Taeniopygia castanotis	Zebra finch	6

REPTILES

Crotalus adamanteus	Eastern diamond-backed rattlesnake	5
Epicrates cenchris	Rainbow boa	18
Natrix, sp	Water snakes	8
Tiliqua nigrolutea	Black-barred skink	5
Tiliqua scincoides	Blue-tongued skink	3

FEEDING THE ANIMALS

To feed such a collection of animals with their varied requirements presents a considerable problem. At the beginning of the war, prices for many of the green types of food had gone so high that the use of such material was almost prohibitive, although it is essential for the well-being of many of the animals. Therefore the Zoo inaugurated a system of obtaining from nearby grocery stores the outer leaves of lettuce, cabbage, cauliflower, and other material that would normally go into the refuse. This material is picked up daily and is sorted to make certain that it is in suitable condition. The animals have thrived, the cost for such green food has been held to a minimum, and it was thus possible to keep out of competition for human food when such material was scarce. The arrangement has been so satisfactory that it is being continued.

During the war the United States Marshal's office made arrangements to turn over to the Zoo food that had been condemned in the courts as unsuitable for human consumption. That office has continued to send considerable quantities and many different kinds of such food. The Zoo also frequently receives offers from private individuals or business houses of food that they wish to dispose of without having to go through the court procedure of condemnation. Thus diversified food was received for the animals, which greatly aided in keeping down the cost of feeding.

MAINTENANCE AND IMPROVEMENTS

In the lion house many of the old cages were extensively repaired, and a portion of the steam conduit under the building was repaired and improved. Concrete floors were laid in the outside cages at the monkey house, and 6-inch concrete slabs were laid between the sidewalk and the cages around the stone cat houses. A sidewalk was built from the small-mammal house to the walk between the reptile house and the antelope building.

By clearing and surfacing additional land, the capacity of the bus-parking area was increased from 20 to 40 busses. The capacity of the automobile-parking area also was increased from 650 to 750 automobiles.

For the third successive year the fight by chemical means against poison ivy continued, and very little of this plant pest remains in areas commonly frequented by the public. Increased efforts have been directed toward improving the appearance of the grounds, caring for the lawns, planting trees and shrubs, and carrying on other gardening work. As a whole, satisfactory progress has been made in returning to normal maintenance.

VISITORS

The total attendance was 3,346,050, an increase of 305,510 over the previous year. This was the largest attendance in the history of the Zoo and is probably due in part to the continued high employment in the Washington area, increase in travel accompanying the general economic prosperity, and the frequency with which we were able to announce the addition of interesting specimens to the collection. The variation in attendance on the different days of the week which was so extreme before the war has been much less noticeable since the war. Formerly early days of the week had relatively low attendance, with an increasing number of visitors the latter portion of the week and with very large crowds on Saturdays, Sundays, and holidays. There is also a considerable increase in attendance in the earlier hours of the day.

ESTIMATED NUMBER OF VISITORS FOR FISCAL YEAR 1949

July (1948)	424,000	February	167,700
August	468,000	March	245,300
September	339,000	April	375,500
October	230,300	May	410,500
November	169,400	June	299,900
December	49,450		
January (1949)	167,000	Total	3,346,050

Groups came to the Zoo from schools in 25 States, some as far away as Maine, Florida, Texas, and California. One group of 33 persons came from Havana, Cuba.

NUMBER OF GROUPS FROM SCHOOLS

	Number of groups	Number in groups		Number of groups	Number in groups
Alabama	7	197	Mississippi	2	35
California	1	158	New Jersey	23	1,374
Connecticut	8	497	New York	95	5,582
Delaware	7	385	North Carolina	154	5,320
District of Columbia	132	7,822	Ohio	47	1,647
Florida	6	672	Pennsylvania	245	12,261
Georgia	48	1,819	South Carolina	39	1,119
Illinois	1	21	Tennessee	33	1,453
Indiana	12	451	Virginia	362	19,312
Kentucky	9	291	West Virginia	50	2,425
Maine	12	775			
Maryland	525	28,859	Total (States)	1,843	93,599
Massachusetts	7	374	Havana, Cuba	1	33
Michigan	16	674			
Minnesota	2	76	Total	1,844	93,632

About 2 p. m. each day the cars then parked in the Zoo are counted by the Zoo police and listed according to the State, Territory, or country from which they came. This is, of course, not a census of the cars coming to the Zoo, but is valuable in showing the percentage

of attendance, by States, of people in private automobiles. The tabulation for the fiscal year 1949 is as follows:

	Percent		Percent
Washington, D. C.	26. 9	Ohio	1. 7
Maryland	26. 4	West Virginia	1. 4
Virginia	20. 5	New Jersey	1. 3
Pennsylvania	4. 4	Massachusetts	. 9
New York	2. 5	Florida	. 9
North Carolina	2. 0	California	. 8

The cars that made up the remaining 10.30 percent came from every one of the remaining States, as well as from Alaska, Bahamas, Canada, Canal Zone, Chile, Cuba, Guam, Hawaii, Honduras, Italy, Japan, Mexico, Netherlands, Newfoundland, Poland, Puerto Rico, Sweden, Trieste, Trinidad, and Virgin Islands.

It is well known that District of Columbia, Maryland, and Virginia cars bring to the Zoo many people from other parts of the United States and of the world, but no figures are available on which to base percentages.

FINANCES

The regular appropriation provided in the District of Columbia appropriation act was $492,600, and there was a supplemental appropriation in the second deficiency bill of $36,248 to provide for the increased salaries of $330 per annum authorized by Congress. Of the total of $528,848 which was available, about $11,474 will remain unexpended, subject to minor changes in final bills. This saving was mainly from salaries because of the impossibility of filling positions promptly.

The stone restaurant building, which was constructed in the park in 1940 under an allotment of $90,000, is under a 3-year lease obtained by competitive bidding at $10,212 per annum. This money is deposited in the general fund of the United States Treasury. The concessionaire serves meals and light refreshments, and sells novelties.

NEEDS OF THE ZOO

The chief need of the Zoo is for the replacement of antiquated structures that have long since ceased to be suitable for the purpose. The more urgently needed buildings are: (1) A new administration building to replace the 144-year-old historic landmark now in use for an office building for the Zoo, but which is neither suitably located nor well adapted for the purpose. This building is in an excellent location for a public recreational structure, and could probably be rehabilitated and used for recreational purposes, perhaps as a children's

museum, and thus maintained as a historic building. The new office building should be better located both from the standpoint of accessibility to the public and convenience for the administration of the Zoo. (2) A new building to house antelopes and other medium-size hoofed animals that require a heated building.

STATUS OF THE COLLECTION

Class	Species	Individuals	Class	Species	Individuals
Mammals	235	786	Crustaceans	1	2
Birds	346	1,911	Arachnids	2	3
Reptiles	121	509	Insects	1	100
Amphibians	22	164	Mollusks	3	23
Fish	24	226			
			Total	755	3,724

SUMMARY

Animals on hand July 1, 1948	2,797
Accessions during the year	1,751
Total number of animals in collection during the year	4,548
Removals for various reasons such as death, exchanges, return of animals on deposit, etc	824
In collection on June 30, 1949	3,724

Respectfully submitted.

W. M. MANN, *Director.*

Dr. A. WETMORE,
Secretary, Smithsonian Institution.

APPENDIX 8

REPORT ON THE ASTROPHYSICAL OBSERVATORY

SIR: I have the honor to submit the following report on the operations of the Astrophysical Observatory for the fiscal year ended June 30, 1949:

The Observatory includes two research divisions: (1) the Division of Astrophysical Research, concerned chiefly with solar radiation problems, and (2) the Division of Radiation and Organisms, concerned with the biological effects of radiation.

During the year a new room adjoining the Director's office was built for the administrative assistant and for the files of the Observatory. The resulting consolidation of needed information near at hand has materially improved the efficiency of operation.

Considerable progress can be reported concerning the new revised editions of the Smithsonian Meteorological Tables and the Smithsonian Physical Tables, mentioned in last year's report. R. J. List, editor of the Meteorological Tables revision, had practically completed his manuscript at the end of the fiscal year. The difficult task of revising the Physical Tables, the last revision of which had been issued in 1934, was begun in September 1948 under the direction of Dr. W. E. Forsythe. An office in Cleveland, Ohio, and an assistant were furnished to Dr. Forsythe. At the close of the fiscal year he reports that approximately one-half of the tables for the new edition have been completed.

(1) DIVISION OF ASTROPHYSICAL RESEARCH

Previous to 1946 the Observatory had for many years maintained three high-altitude field stations for solar-constant observations. In 1946 the Tyrone station, which for 7 years had been operated on Burro Mountain (altitude 8,000 ft.) in southwestern New Mexico, was abandoned because skies there had progressively deteriorated, mainly the result of increasing mining and smelting operations in that general region. As a temporary measure, to aid in certain studies referred to below under contract with the Quartermaster Corps, the Tyrone station equipment was transferred to and installed at Miami, Fla. Since then much effort has been spent to find the most suitable location for a third high-altitude field station to replace the abandoned Tyrone site. In last year's report we mentioned that after

careful investigation three promising sites had been chosen for further study and that in May 1948 a recording Eppley pyrheliometer was installed at each of these sites, namely, (1) Torreón, Coahuila, México; (2) Mountain Pass, near Clark Mountain, California; and (3) Pohakuola, Hawaii. The three pyrheliometers were operated for a period of 1 year, ending June 1949. The resulting records indicate the uniformity and the quality of the sky for each day during the period. It is clear from the records that the best skies prevailed at the Clark Mountain location. The second-best site was Pohakuola. This spot, 6,500 feet above sea level on the Island of Hawaii, yielded some records of unusually clear and uniform skies, but such skies were not the rule. At Clark Mountain, during the period June 8 to March 31, there were 171 days with skies sufficiently good for satisfactory observations, while at Table Mountain, Calif., during the same period actual observations were made on 135 days. From studies of these records and other sources, it appears that the Clark Mountain region is in general considerably drier and more free of haze and clouds than any other high-altitude location at present known in the northern hemisphere.

In view of this, estimates were obtained of the cost of establishing a field station at an altitude of 6,500 feet on the south slope of Clark Mountain. Owing to the prevailing high prices for building materials and labor, the estimates proved to be in excess of available funds. It is hoped that sufficient funds may become available, but pending this the Observatory plans immediately to enlarge its facilities at Table Mountain sufficiently so that it will be possible to proceed without delay with the special experimental problems mentioned in last year's report.

Work at Washington.—W. H. Hoover, Chief of the Division, in addition to supervision of the work in progress, prepared data and tables which will help to simplify the computations in the field. In the past, to obtain the air mass (or length of path of the solar beam in the atmosphere) it has been necessary to plot carefully a series of theodolite readings against time, to read off desired altitude values, and finally to enter an air-mass-altitude table. With the aid of Hoover's data, the observer, by reading the theodolite at specified intervals, may enter the tables directly to determine the air mass. This eliminates the tedious curve-plotting process.

A new instrument, designed by Dr. John W. Evans, of the High Altitude Observatory of Harvard University, and described by him in the Journal of the Optical Society of America, December 1948, was kindly lent to the Astrophysical Observatory by Dr. Menzel of Harvard University to test and to determine its adaptability to Smithsonian work. The instrument is a photometer especially designed

for determining the brightness of the sky immediately surrounding the sun. Excellent results have been obtained with it at the Harvard Station at Climax, Colo. It is of considerable interest to compare its readings with simultaneous readings of the Smithsonian pyranometer which also measures the brightness of the sky in a zone around the sun. In preparation for comparison tests a rigid mounting has been prepared for the instrument with slow-motion adjustment in altitude and azimuth.

During the fiscal year, two silver-disk pyrheliometers, Nos. 80 and 81, were built, calibrated and sold at cost, one to the Hebrew Institute of Technology, Haifa, Palestine, and the other to the Dublin Institute for Advanced Learning. In addition two modified Angstrom pyrheliometers and one special instrument for the spectroscopic determination of atmospheric water vapor have been prepared for the Belgium Meteorological Institute. These were nearly completed at the end of the year.

Dr. C. G. Abbot, research associate of the Observatory, continued his studies of the dependence of weather upon solar changes. This work has been published in Smithsonian Miscellaneous Collections, vol. 111, Nos. 5, 6, and 7. Dr. Arctowski's studies of solar and terrestrial atmospheres were retarded by illness, but his work was resumed before the close of the year.

Work in the field.—Daily observations of the solar constant were in progress throughout the year, as far as skies permitted, both at Montezuma, Chile, and at Table Mountain, Calif. The skies during the year were apparently normal at Table Mountain, but at Montezuma the observers noted an unusual number of days with light cirrus clouds.

Early in the year Mr. Hoover carried the Observatory's substandard silver-disk pyrheliometer S. I. No. 5 to Miami for direct comparisons with the pyrheliometers at that station. In February 1949, in the course of changing the personnel at Montezuma, Chile, substandard S. I. No. 5 was carried to Montezuma by the new Montezuma observer, and brought back in April by the retiring observer, after intercomparisons had been made in Chile. The previous year S. I. No. 5 had been carried to Table Mountain by the director for similar intercomparisons. Thus there are now very recent direct comparisons between all field pyrheliometers and substandard S. I. No. 5, which in turn was carefully compared in 1947 with the absolute water-flow standard. These many intercomparisons show no material changes in constants. They satisfactorily confirm the adopted scale of pyrheliometry. A revision of Dr. Abbot's paper of 1922 on "The Silver-disk Pyrheliometer" is in preparation, summarizing the constants of all silver-disk pyrheliometers, and describing certain changes which

have been adopted in recent years, both in the instrument itself and in the method of use.

In June 1945 special radiation measurements were started at Camp Lee, Va., under contract with the Office of the Quartermaster General, in connection with their long-range study of the causes for the deterioration of tents and tent materials. This contract has been renewed each year since then, and the work has now extended to include similar radiation measurements at Miami, Fla., a wet, sea-level station, and at Montezuma, Chile, a dry, high-altitude station. The Observatory completed the Camp Lee measurements January 1, 1948, and since then they have been continued by the Quartermaster Board at Camp Lee, with the Observatory acting in an advisory capacity, and giving assistance when difficulties arise. The measurements at Miami, begun in December 1947, have continued throughout the present fiscal year. Similar radiation measurements and textile exposures were begun at Montezuma, Chile, in December 1948, and will continue approximately 2 years. Five reports to the Office of the Quartermaster General were made during the year summarizing the data obtained at Miami and at Montezuma.

In January 1949, the Director visited the Miami field station, to inspect the work in progress. While there he obtained special bolographs showing the absorption effects of known quantities of water vapor in the atmosphere. Measurements of these bolographs confirmed the correctness of precipitable water curves which Mr. Fowle had determined in earlier work at Washington and which have since been used many times in our solar-constant program. This work is discussed in Smithsonian Miscellaneous Collections, vol. 111, No. 12, soon to be issued.

(2) DIVISION OF RADIATION AND ORGANISMS

(Report prepared by Dr. R. B. Withrow)

The work of the Division for the past year has been concerned chiefly with reorganizing and reequipping the laboratories. New office space has been established in conjunction with the basement laboratories. These offices have been furnished with desks and cases and will accommodate a maximum of nine individuals.

Most of the laboratories have been repainted and are being reequipped with modern lighting facilities. The laboratory furniture has been reconditioned and new metal furniture ordered to supplement that already available.

Five rooms are being converted into constant-condition rooms for biological experimentation with equipment for controlling the temperature, humidity, radiation, and nutritional environment.

Four chemistry laboratories will be available, including a general laboratory, a balance room, a dark room held at room temperature for pigment analyses, and an insulated and air-conditioned dark room controlled at 0° C. or above for protein and enzyme analyses.

In addition, a photographic laboratory, a room for X-ray facilities, a cytology laboratory, an electronics laboratory, and two general laboratories are being set up, all of which are being designed with new plumbing to supply gas, compressed air, and water, and with new electrical power outlets.

The Research Corporation has very generously made a grant to the Division for reequipping the laboratories with modern experimental facilities and for work on the mechanism of visible radiation on growth processes in plants. The Division also has been assigned a contract by the Chemical Corps, Department of the Army, providing funds for personnel and equipment for research on the effect of growth regulators on metabolic activities of plant tissues.

Respectfully submitted.

L. B. Aldrich, *Director.*

Dr. A. Wetmore,
Secretary, Smithsonian Institution.

APPENDIX 9

REPORT ON THE NATIONAL AIR MUSEUM

SIR: I have the honor to submit the following report on the operations of the National Air Museum for the fiscal year ended June 30, 1949.

INTRODUCTION

This year, the first full year of the National Air Museum as a bureau of the Smithsonian Institution, was one of many activities. In addition to normal museum operations, the bureau was concerned especially with the return from England of the Wright Brothers' renowned aeroplane, the *Kitty Hawk*; with the acquisition and management of a field storage facility; with the accession of the U. S. Air Force aircraft collection; and with the basic study and planning for a site and building for the aeronautical collections.

Early in 1948 the Institution was informed that the late Dr. Orville Wright had expressed the desire to present the *Kitty Kawk* to the United States National Museum and that the executors of Dr. Wright's estate would institute the necessary legal action to bring this about. Prior to the receipt of this news the Smithsonian had effected the administrative transfer of all aeronautical museum activities and experienced personnel from the National Museum to the newly established National Air Museum. Therefore, in order to have the expert assistance of the Air Museum staff, the Secretary, through the Director of the National Museum, delegated to the National Air Museum the responsibility for the reception, exhibition, and preservation of the Wright plane. The details are indicated under Curatorial Activities presented later in this report.

Negotiations begun last year with the U. S. Air Force to acquire a storage depot for the Air Museum were successfully consummated on November 1, 1948. On that date the bureau was granted occupancy of 267,475 square feet of floor space within building T–6 of the former Douglas Aircraft plant at Chicago Orchard Airport, Park Ridge, Ill., and installed a field organization to operate the facility. On the same date the Museum assumed tentative custody (pending inventory) of the large aircraft collection stored in this building by the Air Force and on May 1, 1949, upon completion of the inventory, assumed full responsibility for its preservation.

Along with these several extra activities the bureau continued, with the Office of Design and Construction of the Public Buildings Administration, the further study of sites and a building for the Museum. This was done in accordance with the recommendation of the Advisory Board. The result of the study is recorded later in this report.

No changes were made during the year in the departmental organization of the bureau except the occasional employment of temporary clerical help. This was especially necessary in connection with the reception and exhibition of the Wright Brothers' aeroplane. The bureau found it difficult, on the other hand, to fill several positions available at its field storage facility because of the higher wage scale prevailing in the Chicago area for comparable work. As a result, the work program planned for this field organization was not fully carried out. In all other respects the bureau completed the year in good condition.

ADVISORY BOARD

In April of this year the Board experienced a change in membership as a result of the retirement of its U. S. Air Force representative, Maj. Gen. E. M. Powers. General Powers had served on the Board since its inception late in 1946, having been designated to the office by General Spaatz. His wise counsel during the formative days of the establishment of the National Air Museum was most helpful. To succeed him on the Board, Gen. H. H. Vandenberg, Chief of Staff, Department of the Air Force, designated Maj. Gen. Grandison Gardner who met with the Board for the first time at its sixth meeting in June 1949.

During the year three meetings of the Advisory Board were held in Washington, on August 26, 1948, December 20, 1948, and June 29, 1949. Deliberations in these meetings were directed principally toward the advancement of the Air Museum's major projects, namely, the acquisition of a building site and a suitable museum building in the Washington area.

As directed by the Board at its August 1948 meeting, the study of a suitable museum building was continued this year in cooperation with the Public Buildings Administration.

STORAGE OF MUSEUM MATERIAL

In accordance with a resolution adopted by the Advisory Board last year, the bureau completed negotiations on November 1, 1948, to take over the storage operations of that portion of one of the former Douglas Aircraft buildings (T–6) at the Chicago Orchard Airport, Park Ridge, Ill., containing the collection of aeronautical museum material stored there by the United States Air Force for the National

Air Museum. Some additional floor space within this building, adjacent to that containing the Air Force collection, together with two two-floor structures erected therein and suitable for office use, was acquired at the same time.

Immediately following this transaction the bureau installed a field organization to operate the facility, consisting of an associate curator in charge, an aircraft technician, and a guard force to patrol the area 24 hours a day. Until February 1, 1949, the military personnel of the Air Materiel Command of the U. S. Air Force, which had been detailed to care for the Air Force collection, remained on duty to assist the bureau's organization in readying itself to assume its responsibilities. With this accomplished, three programs of work were initiated: (1) The rearrangement by classes of the aeronautical materials packed in boxes and crates; (2) the cleaning and sealing of all openings of assembled aircraft and rust-proofing of component parts; and (3) the inspection and inventory of all items composing the collection preparatory to its transfer from the Air Force to the Air Museum.

On May 1, 1949, the inventory was completed and the transfer was effected of 1,366 aeronautical objects including 97 aircraft to the Air Museum. The preservation work was in progress at the end of the year.

While these activities were in progress the bureau took steps to provide the maximum protection of the materials in storage. In addition to the acquisition of hand fire extinguishers installed in fixed positions over the area and of larger extinguishers mounted on hand trucks, an intercommunicating system was selected and a contract let for its installation at 12 stations distributed strategically over the Museum's storage area. This will enable a guard on patrol to communicate quickly with the administration office in any emergency. The bureau also designed and contracted for the construction and erection of a high wire fence to enclose the major part of the area. These projects were in progress at the end of the year.

PLANNING

MUSEUM SITE AND BUILDING

During the year the bureau continued the investigation of sites and a building for the Air Museum. For this purpose it had the valuable cooperation of the Federal Works Agency, Public Buildings Administration, Office of Design and Construction, through an arrangement involving the transfer of funds.

Planning and designing a museum building for aircraft and aviation collections involves factors not usually encountered in museum structures. For example, although the history of practical aviation spans a comparatively short period of years, the steps in its development

are many. Therefore, there must be imposed limitations of selection of materials of both historical and technological significance not only to avoid incomprehensive public displays but also impractical housing requirements. The aeronautical collections will include material both of small and uncommonly great dimensions and weight. Experience indicates that approximately 30 percent of the total available floor area of a technical museum structure is required for its maintenance and operations services and that for the safety of the visiting public ample passageways must be established in all exhibition areas. It can be readily understood that these requirements necessitate a compromise between the ideal and a realistic aviation museum buiding.

Both the Advisory Board and the bureau's staff gave careful attention during the year to factors such as these which brought about a number of changes in the plans originally developed last year.

CURATORIAL ACTIVITIES

The curator, Paul E. Garber, reports on the year's work as follows:

At the beginning of the fiscal year the staff was moved into new and improved quarters which provided more facilities for the expanding personnel. Office and shop equipment were acquired, an efficient procedure for handling correspondence was adopted, and added space was allocated to the library, the reference files, and the photographic files. The constant efforts of the staff in the maintenance of the exhibits are reflected in the improvement of individual displays, but the extreme overcrowding in the present Aircraft Building and the Aeronautical Hall assigned to the bureau in the Arts and Industries Building has approached the danger point to both visitors and specimens. As a result, the addition of large exhibits has been brought to a standstill. Happily, the facility at Park Ridge, Ill., provides for the storage of material which might otherwise be lost to the Museum. Only by the acquisition of a permanent building for the Museum in the Washington area can this situation be corrected.

EXHIBITION

The outstanding accomplishment of the year was the receipt of the Wright Brothers' aeroplane of 1903 and its exhibition and preparation for the presentation ceremony on December 17, 1948, the forty-fifth anniversary of its historic flight. The curator was assigned the pleasant duty of representing the Smithsonian in meeting Dr. Herman Shaw, Director of the Science Museum, London, and of accepting from him at Halifax, Nova Scotia, custody of the aeroplane. This was effected on November 12, and following the transfer of the aeroplane from the S. S. *Mauretania* to the Navy Carrier U. S. S. *Palau*, the curator accompanied the plane to Bayonne, N. J., saw to its reloading on a Navy truck and accompanied the truck convoy to the

National Museum. There the *Spirit of St. Louis* had been moved so that the two noted aircraft could share the same North Hall of the Arts and Industries Building and, with the assistance of photographs and drawings provided by M. J. B. Davy of the Science Museum, the *Kitty Hawk* was assembled. Some details of the engine and transmission were installed from sketches and photographs furnished by Charles Taylor, the mechanic who assisted the Wrights in the original construction of the plane and engine. The aeroplane was suspended in the front of the hall with cables and splices donated by the Jacoel Equipment Co. At the ceremony of presentation, the "Early Birds," the association of pioneer pilots, many of whom had been trained by the Wrights, were among the honored guests. A number of them have since augmented the *Kitty Hawk* exhibit by donations of their own records and relics. Acknowledgments are also made to the Air Force Technical Museum and to S. Dunham, Dayton, Ohio, for photographs and drawings for addition to the Museum's reference and exhibition material on the Wrights. At the close of the fiscal year progress is being made on an auxiliary exhibition case to be placed under the *Kitty Hawk* in which the story of the Wright Brothers will be told in detail.

As the National Air Museum progresses, its purposes and services have become better known, and very helpful cooperation has been received in the matter of accessions. The following examples are outstanding. The presentation of Alford Williams' renowned *Gulfhawk–2* October 11, followed an impressive flight-demonstration of the remarkable aerobatic combination of pilot and plane. The Gulf Oil Company formally presented the airplane at the National Airport and soon after, Major Williams' technician, Frank Tye, who had maintained the plane in splendid condition throughout its 12 years of strenuous flying, assembled it in the Aeronautical Hall. The Department of the Navy, Bureau of Aeronautics, repaired and transferred a Japanese Baka Bomb to the Museum and provided, as auxiliary material, examples of both jet and rocket engines used in these "suicide planes." The collection of scale models which reviews the evolution of aircraft used in Naval service was improved by 10 recent types received from manufacturers who produced the original planes for the Navy. The Department of the Navy assisted also in the special anniversary celebration held in the Aircraft Building to commemorate the thirtieth anniversary of the first trans-Atlantic aircraft flight made by the *NC–4*. An illustrated description of this Curtiss-built flying boat, the hull of which is in the Museum, was prepared by the staff and printed by courtesy of the Curtiss-Wright Corporation. Speakers included Vice Adm. John D. Price, U. S. N., and Capt. Holden C. Richardson, U. S. N., Ret.

The first Roadable Autogyro, transferred from the Civil Aeronautics Administration, was reconditioned by them for museum purposes. In the previous report, the services of the Air Force were acknowledged in moving the Army Curtiss Racer from the Aircraft Building to the Aeronautical Hall—a move made necessary by restricted space. This year, the plane was equipped with the original floats with which Lt. (now General) James Doolittle won the Schneider Trophy Race in 1925. The bracing wires for this restoration were kindly provided by the MacWhyte Company, Kenosha, Wis. Valuable assistance was received this year from the Air Force in unloading and mounting four large engines donated by the Wright Aeronautical Corporation, in covering with Plexiglas the sides of the DeHavilland–4 and Gen. William Mitchell's Spad–16, and in replacing the windows in the first nonstop transcontinental airplane, the *T–2*.

The exhibit which illustrates the accomplishments of John Joseph Montgomery of California, a renowned pioneer of gliding whose first glides were made in 1883, received additions through the cooperation of the Montgomery family, the San Diego Junior Chamber of Commerce, and the biographer, Winsor Josselyn. Through the generosity of the Firestone Tire and Rubber Company, the wheels on the Voisin bomber of World War I were equipped with tires. In the auxiliary exhibit which accompanies the Flagplane of the First World Flight, the group of portrait sculptures were renovated by its sculptor, Joseph A. Atchison, and the stereopticon story of this flight was reactivated. A special exhibition of model aircraft as flown by hobby enthusiasts was prepared in August 1948 during the period of the national show and contest. Improvements were made in the display of Col. Charles Lindbergh's accessories and flight clothing. Extensive cleaning, rearranging, labeling, and repairing have brought the exhibits to a condition believed to be as presentable as the crowded conditions and work program permit.

Special exhibitions arranged by the staff and involving the use of Museum material away from the bureau included a group of cases set up by Bolling Field for the Air Force anniversary on September 18, containing engines, models, and relics of the military air arm; and the loan of the original Liberty engine and models of historic Air Force planes for the technical exhibit and air show held at Andrews Field, Maryland, February 15.

STORAGE

Among the numerous aircraft installed this year in the Museum's storage facility at Park Ridge, Ill., was the *Swoose*, flown there under its own power. This historic B–17–D bomber had served throughout World War II from Bataan to the defeat of Japan. Completing its military career as the command plane of Gen. George H. Brett, the

Swoose was acquired by the city of Los Angeles as a war memorial. In 1948 the city, through Mayor Fletcher Bowron, presented the plane to the National Air Museum, and with the cooperation of Grover Loening and Maj. Gen. E. M. Powers of the Advisory Board, arrangements were made for the reconditioning of the plane by the Air Force. In due time this was accomplished under the direction of the *Swoose's* wartime flight engineer, Captain Boone, and in April 1949, with its wartime pilot, Col. Frank Kurtz, at the controls, the plane was flown to the Chicago Orchard Airport and delivered there to the Museum's storage facility. The Air Force cooperated not only in this spectacular delivery but also in the tremendous project of transferring its huge collection of trophy aircraft and accessories to Museum custody. The screening, cataloging, and arrangement of this stored collection at Park Ridge was under way as the year closed.

The historic and trophy aircraft and engines which are being assembled for the Museum by the Department of the Navy are stored at Norfolk, Va. During the year the curator inspected this facility, checking the condition of the *NC–4*'s wings and other parts, the Japanese "Emily," the German Dornier 335 which had recently been moved there, and the service types which are in "canned" containers. All were in good condition.

Acknowledgments are made to Eastern Air Lines for earmarking one of its first DC–3's for the collection, to the Civil Aeronautics Administration for reserving its famous Boeing 247–D for the Museum, and to the Martin Aircraft Company for the gift of a half-scale flight prototype of the PBM "Mariner." These will be stored temporarily by the donors.

INFORMATIONAL SERVICES

Interest in the Museum is widespread, and its services to the industry, Government departments, students, research workers, historians, authors, craftsmen, and the air fraternity in general are daily becoming more in demand as reflected in the numbers of inquiries and requests received by letter, personal visit, and telephone. Radio programs in which the Museum participated included, Information Please, We The People, and the Air Force Hour. The curator told the story of the *Swoose* over the radio both in Los Angeles and Omaha, and television programs illustrated the *Kitty Hawk*, *Gulfhawk–2*, the *NC–4*, and the Museum's model collection.

The Bureau of Ordnance, Department of the Navy, borrowed a number of the Museum's scale models to be used as patterns for research problems; the Interior Department was assisted with aeronautical details in some of its museum dioramas; the Public Schools of the District of Columbia received help in conducting their aero-

nautical courses; and Pan American Airways was loaned photographs of Santos-Dumont's airships for use in its publicity displays on Brazil. The historic sections of the Aircraft Year Book were compiled with help of the Museum staff; Bettman Archive received identification on a group of unlabeled photographs of airplanes; the Prewitt Aircraft Company used the Museum's reference files during their search for details of rotary aircraft; and the United States Chamber of Commerce and the Vallejo, Calif., museum, received assistance in displaying exhibits.

Another edition of the Handbook of the National Aircraft Collection was issued, embodying changes which bring it up to date. This is the eighth printing of 10,000 since the first issue in 1928. During the year the curator lectured on technical and historical aspects of flight and the progress of the National Air Museum to the Aero Club of Washington, the Air Transport Association, the "99ers" association of women flyers, the Washington Association of Building Superintendents, the Civitan Club, several local fraternal and church groups, and served as judge of scale-model craftsmanship at the National Capital Air Show, and at a kite contest held by local units of the Boy Scouts.

In conducting its informational services the staff acknowledges the help given by members of the "Early Birds," collectors of aeronautical photographs and clipping scrapbooks, pilots, manufacturers, airmen, and many others who donated reference material to the Museum's data files and library. These helpful source data are assembled and readily available for serious study.

SURVEY

The survey over the Nation of aeronautical materials of technical and historical significance was continued during the year. Much of the work was conducted by staff correspondence. Frequently, however, it became necessary to undertake direct investigation and study of suggested material and consultations with those acquainted with the material. It was in this connection, primarily, that the following visits away from Washington were made by the staff:

Middletown, Pa., Olmsted Air Force Base, July 23, by associate curator Robert C. Strobell, to examine a group of Japanese trophy airplanes which had been evaluated and tested.

Buffalo, N. Y., Airport, August 31, by associate curator Stephen L. Beers, to inspect two Curtiss engines used in early Naval aircraft and two French engines of World War I.

Roosevelt Field, Long Island, N. Y., and East Orange, N. J., October 11–16, by the curator, to examine a group of historic American, English, and French airplanes and to determine the availability of a Benoist airplane of 1912.

Halifax, Nova Scotia, November 9–22, by the curator, to obtain the Wright Brothers' aeroplane of 1903.

Los Angeles, Calif., Inglewood Field, and March Field, January 19–29, by the curator, to receive, recondition, and test hop the Boeing B–17–D bomber *Swoose*.

Aberdeen and Baltimore, Md., March 15, by Mr. Beers, to inspect aircraft and obtain a scale model of the Martin bomber, type MB–1 of 1918.

Jackson Center, Ohio, May 28, by Mr. Strobell, to arrange receipt and shipment of Benoist airplane.

Langley Field, Va., May 23–25, by the curator and Mr. Beers, to attend the National Advisory Committee for Aeronautics conference and inspect material of museum significance.

Miami, Fla., June 15–18, by Mr. Beers, to attend Eastern Airlines conference and inspect equipment and aircraft made available to the Museum.

Numerous trips were made by staff members between the base and field units in connection with management of the storage area and procurement and placement of accessions.

ACCESSIONS

New accessions totaled 122 objects from 40 sources. The majority of these were solicited by the Museum and involved considerable prior research by the staff to determine the significance and need of each object in the over-all picture of the history and development of aeronautics. In addition, each accession required staff attention in a variable amount in arranging for the procurement and shipment of the object and in incorporating it into the aeronautical collection.

Except where otherwise indicated the accessions received this year and listed below were entered in the Museum's records as gifts or transfers:

NATIONAL AIR MUSEUM ACCESSIONS DURING THE FISCAL YEAR ENDED JUNE 30, 1949

Abel, A. H. (See under Port of Oakland, Board of Port Commissioners.)

Abrams, Talbert (See under Abrams Instrument Corp.).

Abrams Instrument Corp., Lansing, Mich: (Through Talbert Abrams) The *Explorer*, single pusher monoplane with empennage extended on twin booms; believed to be the first American aircraft designed primarily for aerial mapping and survey work (N. A. M. 629, loan).

Aeronca Aircraft Corp., Middletown, Ohio: (Through John A. Lawler) First production Aeronca sport plane, 1929 (N. A. M. 647, loan).

Aeroproducts Division, General Motors Corp., Dayton, Ohio: (Through W. F. Stover) Four Aeromatic propeller assembly displays illustrating types, mechanisms, and production steps (N. A. M. 651).

Alihan, Dr. Milla (See under Kollsman Instrument Division, Square D Co.).

Allen, William B., Jr. (See under U. S. Post Office Department.)

Bastow, J. G., Oakland, Calif.: American flag insignia of the First Aero Squadron, World War I, cut from the fuselage fabric of a Salmson airplane (N. A. M. 625).

Beck, Thomas H. (See under Crowell-Collier Publishing Co.)

Bibichkow, William. (See under Comet Model Airplane and Supply Co.)

Bradley, R. F., San Francisco, Calif.: A framed black-and-white photograph of an early air meet and a souvenir log book of the first round-trip, trans-Pacific Pan American Airways passenger flight, 1936 (N. A. M. 636).

Briskin, Irving. (See under Columbia Pictures Corp.)

Brooklyn Polytechnic Institute, Brooklyn, N. Y.: (Through Dr. D. G. Lockward) A 160-hp. Curtiss V-X aircraft engine used to power a Curtiss R–2 Army reconnaissance plane of 1916 (N. A. M. 631).

Challinor, G. R. (See under Kansas City, Mo., Chamber of Commerce.)

Chance Vought Aircraft, Div. of United Aircraft Corp., Stratford, Conn.: (Through John J. Hospers) Two 1:16-scale airplane models, U. S. Navy, World War II: F4U–4 and OS2U–1 (N. A. M. 630).

Coe, Don, Williamsville, N. Y.: Two aircraft engines, rotary, French, World War I: a Clerget 9B and a Gnome "Monosoupape" (N. A. M. 655).

Collins, C. S. (See under Pan American-Grace Airways, Inc.)

Columbia Pictures Corp., Hollywood, Calif.: (Through Irving Briskin) Two scale models of Prof. John J. Montgomery's gliders reproduced for the motion picture "Gallant Journey." These show the *Santa Clara* of 1905 and the *Evergreen* of 1911 (N. A. M. 626).

Comet Model Airplane and Supply Co., Chicago, Ill.: (Through William Bibichkow) Wind tunnel stated by donor to be the first practical mass-produced type; for personal and classroom use; throat 14″ x 22″; embodies the principles of full-scale designs; accessories are included (N. A. M. 643).

Crowell-Collier Publishing Co., New York, N. Y.: (Through Thomas H. Beck) Original water-color painting by Melbourne Brindle depicting the first flight of the Wright Brothers' aeroplane at Kitty Hawk, N. C., December 17, 1903 (N. A. M. 654).

DeHart, Dana C., San Francisco, Calif.: A major portion of a cabane strut from the Curtiss "R" which was one of the first two planes to carry scheduled air mail from New York to Chicago via Cleveland, September 5 to 17, 1918 (N. A. M. 628).

Dietz, Gould (deceased), Omaha, Nebr.: Two wooden propellers: a "Paragon" 1911, used on the Army's first airship, and a "Flottorp" of early 1920 type inscribed with famous autographs (N. A. M. 644).

Doolittle, Gen. J. H., New York, N. Y.: A jagged fragment, found in China, from the right-engine nacelle of a North American B–25 "Mitchell" bomber which took part in the Tokyo raid of April 18, 1942 (N. A. M. 604).

Douglas Aircraft Co., Inc., Santa Monica, Calif.: A 1:16-size scale model of the Douglas SBD Navy carrier-based dive bomber which saw extensive service in World War II (N. A. M. 620).

Frank, John P. (See under North Carolina Granite Corp.)

Frederick, D. S. (See under Rohm and Haas Co.)

Fries, Leonard, London, England: A large display poster printed from the original painted by the donor, advertising the International Aviation Tournament held at Belmont Park, L. I., October 22 to 30, 1910 (N. A. M. 648).

Gilchrist, Mrs. Guy, Dutch Flat, Calif.: The starter's flag used in the Oakland-Honolulu Dole Race, 1927. Given in memory of her brother, Maj. Edward Howard (N. A. M. 653).

Goodwin, Claire V. (See under Port of Oakland, Board of Port Commissioners.)

Grumman, L. R. (See under Grumman Aircraft Engineering Co.)

Grumman Aircraft Engineering Co., Bethpage, L. I., N. Y.: (Through L. R. Grumman) Four 1:16-size scale models of Grumman aircraft, U. S. Navy, World War II: an F3F biplane fighter, an F4F "Wildcat," a TBM "Avenger" torpedo bomber, and an F7F "Tigercat" (N. A. M. 634).

GULF OIL CORP., Pittsburgh, Pa.: The *Gulfhawk–2* airplane which was flown by Maj. Alford Williams for 12 years. It illustrates the last of the Navy's biplane fighters, an F3F (N. A. M. 652).

HEFFERNAN, CAPT. J. B. (See under National Military Establishment, Department of the Navy.)

HOSPERS, JOHN J. (See under Chance Vought Aircraft, Div. of United Aircraft Corp.)

HUBBELL, CHARLES H., Cleveland, Ohio: Twelve color prints of current-design private aircraft as painted by the donor for the 1949 calendar of Thompson Products, Inc. (N. A. M. 642).

KANSAS CITY, MO., CHAMBER OF COMMERCE: (Through G. R. Challinor) A pressed-coal briquette, carried on Berlin Airlift, 1949; part of the one-millionth ton. It was mined in the Ruhr; flown from Frankfurt to Berlin and thence to Kansas City, Mo., as a feature of a ceremony acclaiming the Airlift (N. A. M. 645).

KARTVELI, A. (See under Republic Aviation Corp.)

KOLLSMAN INSTRUMENT DIVISION, SQUARE D CO., Elmhurst, N. Y.: (Through Dr. Milla Alihan) A machmeter; an instrument used to record speed in Mach Number, which expresses the speed of the aircraft in relation to the speed of sound (N. A. M. 649).

LAWLER, JOHN A. (See under Aeronca Aircraft Corp.)

LOCKWARD, DR. D. G. (See under Brooklyn Polytechnic Institute.)

MEHRHOF, KENNETH C. (See under Wright Aeronautical Corp.)

NATIONAL MILITARY ESTABLISHMENT:

Department of the Air Force. From Air Force Technical Museum, Wright-Patterson A. F. Base, Dayton, Ohio: Five 1:72-size, black plastic World War II aircraft recognition models: a C–47 two-engine transport, a PB2Y four-engine flying boat, a PBM–3 two-engine flying boat, an SB2U single-engine Navy dive bomber, and a TBD single-engine torpedo bomber (N. A. M. 633).

Department of the Navy, Washington, D. C. From Office of the Deputy Chief of Naval Operations (Air): (Through Vice Adm. John D. Price) A plaque, replica of one installed at Lisbon, Portugal, in 1946, commemorating the first trans-Atlantic flight by the *NC–4*, May 1919 (N. A. M. 646). From Office of Public Information, Bureau of Aeronautics: A Navy summer-weight flying suit and helmet, World War II type, worn by Col. Marion E. Carl, U. S. M. C., when he flew the Douglas D–558 *Skystreak* to a world's speed record of 650 m. p. h. on August 25, 1947 (N. A. M. 637). From Office of Public Relations: (Through Capt. J. B. Heffernan, U. S. N., Ret., Curator for Navy Department) Scale models of three planes used by the Navy in World War II: XPB2Y experimental version of Consolidated "Coronado" used for bombing and transport; XPBM experimental version of Martin "Mariner" used for patrol-bombing and antisubmarine service; and TBD Douglas "Devastator" carrier-based torpedo plane (N. A. M. 635, loan).

NEVIN, ROBERT S., Baltimore, Md.: A 1:24-size scale model of the Martin MB–1 twin-engined Army bomber of 1918, made by lender (N. A. M. 621, loan).

NORTH CAROLINA GRANITE CORP., Mount Airy, N. C.: (Through John P. Frank) Architects' model of the Wright Brothers Memorial on the summit of Kill Devil Hill, Kitty Hawk, N. C. (N. A. M. 638).

PAN AMERICAN-GRACE AIRWAYS, INC., New York, N. Y.: (Through C. S. Collins) The Fairchild FC–2 five-passenger cabin monoplane with which the scheduled commercial operations of Panagra System in South America were inaugurated September 1928 (N. A. M. 650).

PERRY, KENNETH M., Washington, D. C.: A German Air Force garrison cap of the World War II period (N. A. M. 622).

PORT OF OAKLAND, BOARD OF PORT COMMISSIONERS, Oakland, Calif.: (Through A. H. Abel) The "Diamond" airplane, identified by donors as the first airplane constructed in California (1910), and the Kemp engine used to power it; a "Wiseman-Cooke" airplane constructed by Fred Wiseman and flown by him in what was probably the first cross-country air-mail flight in America, Petaluma to Santa Rosa, Calif., February 17, 1911. This plane was also flown by Weldon Cooke (N. A. M. 639). (Through Claire V. Goodwin) A pilots' control wheel from the cockpit of Sir Charles Kingsford-Smith's *Southern Cross* airplane, first to fly from the United States to Australia, May 31–June 9, 1928; and a facsimile of the log kept by the copilot, Charles Ulm, on that flight (N. A. M. 640).

PRICE, VICE ADM. JOHN D. (See under National Military Establishment, *Department of the Navy.*)

REPUBLIC AVIATION CORP., Farmingdale, L. I., N. Y.: (Through A. Kartveli) three 1:16 scale models: Republic P–47–N "Thunderbolt" Air Force single-seat fighter, Republic F–84 "Thunderjet" Air Force single-seat fighter, Republic RC–3 "Seabee" all-metal, four-place amphibian personal plane; and a 1:48 scale model: Republic XF–12 "Rainbow" Air Force four-engine, long-range, high-altitude photo-reconnaissance plane (N. A. M. 641).

ROHM AND HAAS CO., Philadelphia, Pa.: (Through D. S. Frederick) Four examples of Plexiglas forms used in construction of aircraft: a P–47 bubble canopy, an astradome, a Crocker-Wheeler nose section for B–26 aircraft, and a Sikorsky Helicopter nose (N. A. M. 627).

SPRATT, GEORGE, Deep River, Conn.: A Curtiss V–8 air-cooled aircraft engine of about 1907, used by the donor's father in experiments with movable-wing aircraft (N. A. M. 624).

STOVER, W. F. (See under Aeroproducts Division, General Motors Corp.)

U. S. POST OFFICE DEPARTMENT, Washington, D. C.: (Through William B. Allen, Jr.) The pouch used to carry air mail on a flight commemorating the thirtieth anniversary of air mail; a flight was made between New York and Washington, D. C., in an Air Force P–80 jet aircraft (N. A. M. 619).

VILAS, JACK, Chicago, Ill.: Hull of the Curtiss Flying Boat in which the donor made the first flight across Lake Michigan on July 1, 1913 (N. A. M. 632).

WALKER, MAJ. THOMAS L., Glen Echo, Md.: Japanese equipment, World War II: an Hitachi aircraft engine from a "Cypress" biplane primary trainer, a cutaway supercharger and fuel metering device produced by Mitsubishi, and a group of five instruments also manufactured by Mitsubishi (N. A. M. 600).

WEEMS, Capt. P. V. H., Annapolis, Md.: A collection of plotters illustrating many forms used to solve navigation problems involving position, direction, and distance (N. A. M. 656).

WRIGHT, ORVILLE, ESTATE OF, Dayton, Ohio: The original Wright Brothers' aeroplane of 1903 (in custody for the U. S. National Museum) (U. S. N. M. 181390).

WRIGHT AERONAUTICAL CORP., Wood-Ridge, N. J.: (Through Kenneth C. Mehrhof) Four radial aircraft engines: Curtiss "Challenger," Wright "Cyclone" 18BA, Wright "Cyclone" 14A, and Wright "Cyclone" 9GB (N. A. M. 623).

Respectfully submitted. CARL W. MITMAN,

Assistant to the Secretary for the National Air Museum.

Dr. A. WETMORE,

Secretary, Smithsonian Institution.

APPENDIX 10

REPORT ON THE CANAL ZONE BIOLOGICAL AREA

SIR: It gives me pleasure to present herewith the annual report of the Canal Zone Biological Area for the fiscal year ended June 30, 1949.

IMPROVEMENTS MADE

A new building, halfway up to the laboratory level and near the generators, was completed. The ground floor will be used largely for the woodworking machinery and carpenter shop, the upper part as living quarters for the warden-caretaker. The old cottage just below the large laboratory building, formerly occupied by the warden-caretaker, has been converted into a very desirable two-room laboratory unit. The forest is close by, making the building exceptionally suitable for observation and study of mammals and other forms.

Work on the 14,000-gallon concrete gravity-flow water tank was halted by heavy rains which made it impossible to use the truck and large concrete mixer. However, the excavation is made and the gravel and reinforcement iron are at the site; 2 or 3 weeks of dry weather will permit completion of the tank.

During the year, from allocated funds, the launch *Snook* was purchased from The Panama Canal. This is a very sturdy, well-built boat 40 feet long, with an 11-foot beam—large enough to accommodate 40 passengers. It is in very good condition and will serve even for towing.

New generators were installed during the year, providing a dependable source of electricity for continuous use.

Eight steel herbarium cases, needed for many years, have been received and the herbarium specimens transferred to them. These specimens are now in excellent condition. Eight steel storage cabinets were also received, providing dustproof storage for much of the laboratory equipment.

SCIENTISTS AND THEIR STUDIES

Twenty-nine scientists came to the laboratory during the year. Although many of them stayed only a short time, their acquaintance with the island and its facilities will no doubt bring others to the laboratory in the near future. The contribution of these scientists has added materially to our knowledge of life under tropical conditions.

Dr. Franz Schrader and Dr. Sally Hughes Schrader returned to continue their cytological studies.

Dr. Frank A. Hartman and Robert Albertin, of the Department of Physiology of the Ohio State University, spent some time on the island, and used the laboratory as their base for excursions up the Chagres River Basin and into the Volcán region of Chiriquí Province. They studied in great detail the anatomy of the adrenals in sloths and the coati-mundi while on the island. The adrenals of more than 600 vertebrates were collected during expeditions in the Republic of Panamá. Field studies were made of selected cases, and the rest of the material was taken to the island for further treatment in preparation for cytological examination later at their University laboratory. The skins of the birds obtained by them were donated to the United States National Museum. The hearts of a number of the vertebrates were sent to Dr. Struthers, of the University of Syracuse, for anatomical study of the coronaries and other blood vessels.

Dr. Hartman plans to return for a much more extensive survey, especially in relation to the effects of the male hormone, particularly in the sloth. The use of the island as a base for excursions to other nearby regions emphasizes one of the unique features of the Canal Zone Biological Area.

Dr. Per F. Scholander and Dr. Vladimir Walters, of the Arctic Research Laboratory at Point Barrow, Alaska, spent considerable time on the island studying the metabolic reactions to temperature in various animals and plants in order to obtain a tropical counterpart for the work done on Arctic forms in Alaska. A deep-freeze was used in some of their work, and the analysis of the tropical mammals and birds in cold gave just the information needed to interpret properly the findings in the Arctic. The work on the island with the deep-freeze proved of basic importance for formulating a theory on the relation between insulation and metabolism.

R. Joseph Kowal, in charge of the laboratory of the Bureau of Entomology and Plant Quarantine at Gulfport, Miss., returned in order to reexamine and evaluate the special series of termite-resistance tests initiated by him 5 years ago, including the very valuable series of soil poisons. He was assisted by Russell E. Fontaine, in charge of the insect- and pest-control work of the United States Army in the Caribbean area.

Dr. Walter Clark, in charge of the Research Laboratory of Eastman Kodak, who had come to inaugurate the large air-conditioned laboratory in the outskirts of Panama City, accompanied by Dr. Cleve C. Soper, in charge of Eastman Kodak's tropical research work here, spent several weeks on the island in connection with their corrosion and deterioration studies. As in past years, Dr. Clark took thousands

of feet of splendid motion pictures of the animal life. The work of the Eastman Kodak Company on the island, and in Panama City, is yielding most valuable data on corrosion and deterioration, as well as a better understanding of the influence of the Tropics on color film.

E. P. Killip, head curator of the department of botany, United States National Museum, spent a short time on the island, collecting material for the herbarium. He went over most of the laboratory's herbarium specimens and later will send such additional sheets as may be needed to augment or supplement the collection.

Dr. Charles C. Adams, pioneer ecologist of the Americas, was another visitor who came to the Tropics for first-hand knowledge. He stressed the value of the island for ecologists, both plant and animal, in providing an intimate acquaintance with jungle life.

Dr. and Mrs. H. N. Moldenke, of the New York Botanical Garden, visited the island after their return from the Second Pan American Botanical Congress held in Tucumán, Argentina. Dr. Moldenke's chief interest was the Verbenaceae, and he very kindly rechecked the laboratory's material in this family.

Dr. Marshall Stone, of the University of Chicago, again revisited the island for a short time.

Phil W. Longenecker, student at Colorado College, spent the month of July on the island. He made a list of 98 species of birds that he positively identified, with copious notes on their habits. His studies also included observations on a number of the mammals. In his report he states that he did not find it necessary to go far into the forest, as there was so much to see within a mile of the laboratory.

Dr. Eugene Eisenmann, of New York City, visited the island again this year to continue his ornithological studies. Dr. Eisenmann is an authority on the birds of this region. He will prepare a list, brought up to date, of the birds observed on the island.

Oliver E. Mosser, of Smithtown Branch, N. Y., came for a few days, specifically to make certain important observations of army ants for Dr. Schneirla. In addition he studied birds and mammals.

Frank W. Hunnewell and his sister Louise revisited the island and stayed several weeks, following up his botanical studies. They showed the same deep interest in the island that they had displayed ever since Dr. Barbour was actively connected with its direction.

It is a pleasure to record again a short visit by Dr. and Mrs. Matthew W. Stirling and Richard Stewart, who were in Panamá on archeological reconnaissance on behalf of the National Geographic Society and the Smithsonian Institution. Motion pictures were taken by Mr. Stewart to complete the reel covering the island.

Dr. Wetmore, Secretary of the Smithsonian, revisited the island,

at which time conferences were held with the writer on island matters, plans for the future, improvements that would be desirable. W. M. Perrygo, of the National Museum, accompanied him as assistant.

John E. Graf, Assistant Secretary of the Smithsonian Institution, spent 2 weeks on the island in June and July, examining the laboratory facilities and discussing its operations.

A. C. Langlois, of the Bahamas, whose deep interest in palms and horticulture in general are well known, was a welcome visitor for a few days, during which brief time he was able to observe the palms as they grow in their natural habitat.

W. E. Lundy, secretary-treasurer of The Panama Canal Natural History Society, a keen student of nature, spent a week on the island, and as on earlier visits prepared a detailed report of the mammals, birds, reptiles, and other forms that he saw. These yearly lists from Mr. Lundy form a very valuable record.

Miss E. Thomas and Miss Marie Weir, local naturalists of note, again revisited the island for a few profitable days.

The writer continued his special research problems, particularly the long-term termite-resistance tests, and fruit-fly populations. The large Berlese funnel has been kept in operation, and it is of interest to note the great number of species of mites, pseudoscorpions, and ants, particularly some of the very rare genera, that have been collected in this manner.

An interesting development from work done at Barro Colorado Island that should be mentioned here, since it has not previously been noted, is the availability of a phonograph record of jungle sounds by day and by night, familiar and friendly to those who know them, mysterious and sometimes fearful to the uninitiated. The work is that of Dr. Arthur A. Allen and Dr. Paul Kellogg of Cornell University who, during the war, made a long series of recordings in the jungle for training use with American troops assigned to outpost duty. A considerable part of the work was done on Barro Colorado Island, though it is only recently that the material has been released and prepared in form available to the public. The voices of howler monkeys, birds, and amphibians, reproduced faithfully by painstaking techniques, carry fully the ordinary sounds heard during the 24 hours about the Island.

MORE URGENT NEEDS

One of the most urgent needs is the fireproofing of certain structures by the use of concrete posts and concrete blocks, which could be accomplished gradually. These buildings are the Barbour and Chapman houses, the kitchen and its adjacent storerooms, and the main laboratory building.

Even more urgent is a new laboratory and storage building, which will require a small addition to the clearing back of our present laboratory site. This structure should be built with concrete posts and sills, and concrete-block sides, and should have at least six rooms. Provision should be made for the periodical use of heat in order to reduce the growth of molds. This building would provide separate rooms for the library, for scientific records, for storage of cameras and other delicate apparatus, for the herbarium, for laboratory glassware, and for chemicals. The entire building should be well ventilated, but in addition glass windows should be provided so that when necessary these can be tightly closed and heat used. High humidity, the subsequent rapid growth of fungus, and the need of protection from termites are problems of the first order in the Tropics.

Other urgent needs are steel storage cabinets, metal bookcases with closing glass fronts, metal card-index cabinets for the species index and the library index, and sectional steel letter files.

TABLE 1.—*Annual rainfall, Barro Colorado Island, Canal Zone*

Year	*Total inches*	*Station average*	*Year*	*Total inches*	*Station average*
1925	104. 37	------	1937	124. 13	110. 12
1926	118. 22	113. 56	1938	117. 09	110. 62
1927	116. 36	114. 68	1939	115. 47	110. 94
1928	101. 52	111. 35	1940	86. 51	109. 43
1929	87. 84	106. 56	1941	91. 82	108. 41
1930	76. 57	101. 51	1942	111. 10	108. 55
1931	123. 30	104. 69	1943	120. 29	109. 20
1932	113. 52	105. 76	1944	111. 96	109. 30
1933	101. 73	105. 32	1945	120. 42	109. 84
1934	122. 42	107. 04	1946	87. 38	108. 81
1935	143. 42	110. 35	1947	77. 92	107. 49
1936	93. 88	108. 98	1948	83. 16	106. 43

TABLE 2.—*Comparison of 1947 and 1948 rainfall, Barro Colorado Island, Canal Zone (inches)*

Month	Total		Station average	Years of record	Excess or deficiency	Accumulated excess or deficiency
	1947	1948				
January	0.40	1.84	1.84	23	------	------
February	2.14	0.19	1.22	23	−1.03	−1.03
March	0.54	0.17	1.36	23	−1.19	−2.22
April	3.09	2.92	2.81	24	+0.11	−2.11
May	4.82	10.80	10.85	24	−0.05	−2.16
June	12.06	6.32	11.10	24	−4.78	−6.94
July	7.53	11.45	11.61	24	−0.16	−7.10
August	11.76	10.46	12.44	24	−1.98	−9.08
September	9.53	6.72	10.27	24	−3.55	−12.63
October	13.17	10.74	13.07	24	−2.33	−14.96
November	7.25	20.33	18.84	24	+1.49	−13.47
December	5.63	1.22	11.02	24	−9.80	−23.27
Year	77.92	83.16	106.43	------	------	−23.27
Dry	6.17	5.12	7.23	------	------	−5.36
Wet	71.75	78.04	99.20	------	------	−17.91

FISCAL REPORT

During the fiscal year 1949, $12,256.05 in trust funds was available. Of this amount $11,118.90 was spent, leaving on hand only $1,137.15 with which to face the new fiscal year. In addition to this, $1,122.30 is still on deposit, representing local collections.

During the year only $1,243.00 was collected as fees from scientists, as compared to $1,907.75 last year. This decline is very largely due to the high cost of transportation to the Isthmus, which keeps many from coming. Despite the higher cost of food and other items, the laboratory has not increased its per diem charge to scientists. Those from institutions that sustain table subscriptions still receive a discount of 25 percent.

The following institutions continued their support to the laboratory through the payment of table subscriptions:

Smithsonian Institution	$500.00
American Museum of Natural History	300.00
Eastman Kodak Company	1,000.00
New York Zoological Society	300.00
University of Chicago	300.00
Ohio State University	300.00

The Forest Products Laboratory, United States Department of Agriculture, contributed $25.00 a month as service fees for facilities furnished.

It is most gratifying to record donations from Dr. Eugene Eisenmann, Dr. Oliver P. Pearson, Mrs. Dorothy Edgerton, Miss Louise Hunnewell, Mr. Frank W. Hunnewell, and the Botanical Society of Washington.

The sum of $5,000 was made available by the Smithsonian Institution from appropriated funds, and of this amount $4,997.53 was used for permanent improvements. The Institution also contributed $3,000 from its private funds, in addition to its table fees.

Respectfully submitted.

JAMES ZETEK, *Resident Manager.*

Dr. ALEXANDER WETMORE,
Secretary, Smithsonian Institution.

APPENDIX 11

REPORT ON THE LIBRARY

SIR: I have the honor to submit the following report on the activities of the Smithsonian library for the fiscal year ended June 30, 1949:

All the continents and most of the countries of the world were represented among the 57,671 publications received by the library during the year. These books, pamphlets, and serials were predominantly scientific and technical in character and touched all the special and related fields of interests of the Smithsonian Institution and its branches. The International Exchange Service transmitted 5,082 of them, and the rest came by mail or by other means of delivery.

Acquisitions by purchase included 1,792 volumes, three collections of pamphlets on special subjects, and subscriptions for 279 periodicals.

Gifts of 7,287 publications came from many different donors. The library owes a lasting debt of gratitude to these friends of the Institution, at home and abroad, for their generous contributions of books and papers, many of which the library would not otherwise have been able to acquire. Not yet statistically recorded in the library is the important gift of the large Ferdinand Perret Research Library of the Arts and their Affiliated Sciences, presented by Mr. Perret to the National Collection of Fine Arts.

The library's principal strength and the backbone of its usefulness lies in the large collections of publications, chiefly serials, issued by the research institutions, scientific societies, universities, academies, museums, and observatories all over the world, which the Smithsonian Institution receives in exchange for its own publications. These are the primary sources of the records of progress in science and technology, in the arts and industries. Ready access to them is indispensable to the work of the Institution. The larger number of the 17,713 periodical entries recorded during the year were these exchange publications, and many monographic works received in exchange were separately cataloged. There were 338 new exchanges arranged, and 7,008 volumes and parts needed to fill gaps in serial sets, or for special purposes, were obtained in response to 726 special requests made to the issuing agencies.

A grand total of 17,771 publications were sent to the Library of Congress. Of these, 1,978 volumes and 4,582 periodical parts were recorded as permanent additions to the great Smithsonian Deposit there. The others were foreign and domestic dissertations, documents, and miscellaneous publications of little immediate importance to the work of the Institution.

The Army Medical Library selected for transfer 859 publications no longer needed here in the sectional library of the division of medicine. Also sent to the Army Medical Library were 1,068 currently received medical dissertations and 1,927 other publications on medical subjects. A total of 1,532 publications were distributed, according to subject, among other libraries of the Government.

The cataloging of currently received publications was kept up without serious time lags and with no additions to the large "backlog" of many years standing. Records of 6,884 volumes were added to catalogs and shelflists, and 31,184 cards were filed. Work on the correlation of the central periodical entry records with those of the central catalog was begun, and 389 entries were checked, corrected, and unified. This is important work which will have far-reaching results in shortening the time of record keeping and in giving prompter service to readers.

Funds allotted for binding permitted 1,060 volumes to be prepared and sent to the Government Printing Office, but again were not sufficient to keep up with the number of volumes of serial publications completed during the year, so the "backlog" of binding continued to grow. A total of 1,026 books and pamphlets were repaired in the Museum library, but there is always much more of such work to be done than one assistant can handle, and here too there is regrettable arrearage.

Increasingly heavy demands upon reading and reference services of the library, especially from outside the Institution, were noticed throughout all the branches. Every year many visiting scientists and other scholars not only from our own but from other countries of the world make more or less extensive use of the library's resources, while letters and telephone requests for information pour in daily. Interlibrary loans of 2,619 publications to 89 different libraries were made, an increase of 732 over last year. The principal borrowers were other scientific libraries of the Government in Washington, and research institutions, museums, and universities elsewhere.

Three positions were vacant during the entire year, and the Museum library had no messenger after the end of January. The

redistribution of work assignments necessary to meet the emergencies of the situation could only be made at the expense of neglecting or postponing all but the most immediately demanding of the library's responsibilities. While every effort was made to see that services to the scientific staff suffered as little as possible, some irritating delays and inconveniences were unavoidable, most noticeably from the lack of adequate messenger service.

There was a heartening improvement in one branch of the service, made possible by the promotion of an acquisitions assistant to fill the much needed new position of assistant librarian in charge of the Astrophysical Observatory library. The position from which the promotion was made, however, is one of those still unfilled.

Even more serious than the vacancy of library positions is the housing of the library. For many years the shelves have been so badly overcrowded that the shelving of each year's acquisitions has been a matter of makeshift contrivance. To relieve the congestion double shelving—that is, two rows of books shelved one behind the other on a single shelf—has become a common practice, especially in the Natural History building. Whole sections of books in relatively less frequent use have had to be shifted to inconvenient locations in the attic stacks of the Arts and Industries building where dust and dryness are particularly bad. The generally poor arrangements of the library's quarters in all the buildings, too, and the lack of any well-equipped space for a centralized collection of the indispensable reference books needed in common by all the bureaus of the Institution are handicaps to the kind of library service that should be expected in the Smithsonian Institution. Until some practical means can be found to remedy these and many related bad housing conditions, progressive deterioration of books and library service alike is inevitable.

Summarized Statistics

Accessions

	Volumes	Total recorded volumes June 30, 1949
Astrophysical Observatory (including Radiation and Organisms)	486	13,073
Bureau of American Ethnology	112	34,719
National Air Museum	23	40
National Collection of Fine Arts	347	11,791
National Museum	2,775	243,666
National Zoological Park	13	4,193
Smithsonian Deposit at the Library of Congress	1,978	580,651
Smithsonian Office	466	33,073
Total	6,200	921,206

Neither incomplete volumes of periodicals nor separates and reprints from periodicals are included in these figures.

Exchanges

New exchanges arranged 338
104 of these were assigned to the Smithsonian Deposit in the Library of Congress.
Specially requested publications received 7,008
923 of these were obtained to fill gaps in the Smithsonian Deposit sets.

Cataloging

Volumes and pamphlets cataloged 6,884
Cards added to catalogs and shelflists 31,184

Periodicals

Periodical parts entered 17,713
Of these, 4,582 were sent to the Smithsonian Deposit at the Library of Congress.

Circulation

Loans of books and periodicals 11,689
This figure does not include the intramural circulation of books and periodicals filed in 31 sectional libraries, of which no count is kept.

Binding

Volumes sent to the bindery 1,060
Volumes repaired in the Museum 1,026

Respectfully submitted.

LEILA F. CLARK, *Librarian.*

Dr. A. WETMORE,
Secretary, Smithsonian Institution.

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APPENDIX 12

REPORT ON PUBLICATIONS

SIR: I have the honor to submit the following report on the publications of the Smithsonian Institution and its branches during the year ended June 30, 1949.

The Institution published during the year 14 papers and title pages and tables of contents for 2 volumes in the Smithsonian Miscellaneous Collections, 1 Annual Report of the Board of Regents and pamphlet copies of 18 articles in the Report appendix, 1 Annual Report of the Secretary, and a new edition of 1 special publication, and a reprint of another.

The United States National Museum issued 1 Annual Report, 25 Proceedings papers, 3 Bulletins, and 2 papers in the Bulletin series, Contributions from the United States National Herbarium.

The Bureau of American Ethnology issued 1 Annual Report and 2 Publications of the Institute of Social Anthropology.

The Freer Gallery of Art issued 1 publication in its Occasional Papers series.

Of the publications there were distributed 267,491 copies, which included 15 volumes and separates of Smithsonian Contributions to Knowledge, 27,438 volumes and separates of Smithsonian Miscellaneous Collections, 26,302 volumes and separates of Smithsonian Annual Reports, 3,696 War Background Studies, 6,361 Smithsonian special publications, 38 reports of the Harriman Alaska Expedition, 66,459 volumes and separates of National Museum publications, 12,787 publications of the Bureau of American Ethnology, 6,873 Publications of the Institute of Social Anthropology, 10 catalogs of the National Collection of Fine Arts, 603 volumes and pamphlets of the Freer Gallery of Art, 38 Annals of the Astrophysical Observatory, 1,389 Reports of the American Historical Association, and 5,014 miscellaneous publications not printed by the Smithsonian Institution (mostly Survival Manuals.)

In addition, 87,715 Guide Books, 22,573 natural history and art post cards, 162 sets of North American Wild Flowers, and 18 Pitcher Plants volumes were distributed.

SMITHSONIAN MISCELLANEOUS COLLECTIONS

In this series there were issued title page and table of contents of volume 107, 7 papers and title page and table of contents of volume 110, and 7 papers in volume 111, as follows:

VOLUME 107

Title page and table of contents. (Publ. 3949.) Sept. 3, 1948.

VOLUME 110

No. 7. Gustavus Sohon's portraits of Flathead and Pend d'Oreille Indians, 1854, by John C. Ewers. 68 pp., 22 pls. (Publ. 3941.) Nov. 26, 1948.

No. 8. The behavior of barometric pressure during and after solar particle invasions and solar ultraviolet invasions, by B. Duell and G. Duell. 34 pp., 21 figs. (Publ. 3942.) Aug. 5, 1948.

No. 9. A new genus and five new species of American fishes, by Samuel F. Hildebrand. 15 pp., 6 figs. (Publ. 3943.) July 28, 1948.

No. 10. The feeding organs of Arachnida, including mites and ticks, by R. E. Snodgrass. 93 pp., 29 figs. (Publ. 3944.) Aug. 18, 1948.

No. 11. The Smithsonian standard pyrheliometry, by C. G. Abbot. 4 pp. (Publ. 3945.) Aug. 5, 1948.

No. 12. The Drum Mountains, Utah, meteorite, by E. P. Henderson and S. H. Perry. 7 pp., 5 pls. (Publ. 3946.) Sept. 3, 1948.

No. 13. Contributions to the anthropology of the Soviet Union, by Henry Field. 244 pp., 5 pls. (Publ. 3947.) Dec. 22, 1948.

Title page and table of contents. (Publ. 3984.) May 12, 1949.

VOLUME 111

No. 1. Mirandolle's forest falcon, by Herbert Friedmann. 4 pp., 2 pls. (Publ. 3948.) Sept. 22, 1948.

No. 2. Prehistory and the Missouri Valley development program. Summary report on the Missouri River Basin Archeological Survey in 1947, by Waldo R. Wedel. 52 pp., 8 pls. (Publ. 3950.) Nov. 23, 1948.

No. 3. Further new Cambrian bellerophont gastropods, by J. Brookes Knight. 6 pp., 1 pl. (Publ. 3951.) Dec. 24, 1948.

No. 4. Type material of the species of clerid beetles described by Charles Schaeffer, by Edward A. Chapin. 12 pp. (Publ. 3977.) Apr. 5, 1949.

No. 5. 1948-1949 report on the 27.0074-day cycle in Washington precipitation, by C. G. Abbot. 2 pp. (Publ. 3980.) Mar. 8, 1949.

No. 6. A prediction of Washington temperature 1948 (made January 1948), by C. G. Abbot. 6 pp., 1 fig. (Publ. 3982.) Mar. 8, 1949.

No. 7. Montezuma solar-constant values and their periodic variations, by C. G. Abbot. 13 pp., 3 figs. (Publ. 3981.) Apr. 19, 1949.

SMITHSONIAN ANNUAL REPORT

Report for 1947.—The complete volume of the Annual Report of the Board of Regents for 1947 was received from the Public Printer December 15, 1948:

Annual Report of the Board of Regents of the Smithsonian Institution showing the operations, expenditures, and condition of the Institution for the year ended June 30, 1947. ix+471 pp., 65 pls., 67 figs. (Publ. 3921.)

The general appendix contained the following papers (Publs. 3922–3939):

Large sunspots, by Seth B. Nicholson.
Atomic energy, by A. E. Johns.
Telegraphy—pony express to beam radio, by George C. Hillis.
Plutonium and other transuranium elements, by Glenn T. Seaborg.
The use of isotopes as tracers, by A. H. W. Aten, Jr., and F. A. Heyn.
Silicones—a new continent in the world of chemistry, by S. L. Bass.
New products of the petroleum industry, by Hugh W. Field.
The tsunami of April 1, 1946, in the Hawaiian Islands, by G. A. Macdonald, F. P. Shepard, and D. C. Cox.
Drowned ancient islands of the Pacific basin, by H. H. Hess.
The biology of Bikini Atoll, with special reference to the fishes, by Leonard P. Schultz.
The senses of bats, by Brian Vesey-FitzGerald.
Mollusks and medicine in World War II, by R. Tucker Abbott.
Some remarks on the influence of insects on human welfare, by Carl D. Duncan.
Mosquito control tests from the Arctic to the Tropics, by E. H. Stage.
The primary centers of civilization, by John R. Swanton.
The Ryukyu people: A cultural appraisal, by Marshall T. Newman and Ransom L. Eng.
Puzzle in Panama, by Waldo G. Bowman.
Comparison of propeller and reaction-propelled airplane performances, by Benson Hamlin and F. Spenceley.

Report for 1948.—The Report of the Secretary, which included the financial report of the executive committee of the Board of Regents, and which will form part of the Annual Report of the Board of Regents to Congress, was issued January 13, 1949:

Report of the Secretary of the Smithsonian Institution and financial report of the executive committee of the Board of Regents for the year ended June 30, 1948. ix+158 pp., 4 pls., 1 chart. (Publ. 3952.) 1948.

The Report volume for 1948, containing the general appendix, was in press at the close of the year.

SPECIAL PUBLICATIONS

National Aircraft Collection, by Paul Edward Garber. Eighth edition. 44 pp., illus. (Publ. 3979.) May 2, 1949.

The following special publication was reprinted:

Brief Guide to the Smithsonian Institution. Seventh edition. 80 pp., illus. Dec. 13, 1948.

PUBLICATIONS OF THE UNITED STATES NATIONAL MUSEUM

The editorial work of the National Museum has continued during the year under the immediate direction of the editor, Paul H. Oehser. There were issued 1 Annual Report, 25 Proceedings papers, 3 Bulletins,

and 2 separate papers in the Bulletin series, Contributions from the United States National Museum.

REPORT

Report on the progress and condition of the United States National Museum for the year ended June 30, 1948. iii+127 pp. Jan. 25, 1949.

PROCEEDINGS: VOLUME 98

No. 3222. A potential snail host of Oriental schistosomiasis in North America (*Pomatiopsis lapidaria*), by R. Tucker Abbott. Pp. 57–68, pls. 3, 4, figs. 10, 11. July 2, 1948.

No. 3224. The serphoid Hymenoptera of the family Roproniidae, by Henry Townes. Pp. 85–89, fig. 12. July 8, 1948.

No. 3225. Parasitic wasps of the genus *Trimorus* in North America, by Robert M. Fouts. Pp. 91–148, figs. 13–15. Aug. 19, 1948.

No. 3226. New pemphilidine wasps from southern Nigeria, by V. S. L. Pate. Pp. 149–162, fig. 16. Oct. 19, 1948.

No. 3227. The butterflies of the Admiralty Islands, by Warren Herbert Wagner, Jr., and David F. Grether. Pp. 163–186, pls. 11–13. Dec. 7, 1948.

No. 3228. Flies of the family Stratiomyidae of the Solomon Islands, by Maurice T. James. Pp. 187–213. Nov. 9, 1948.

No. 3229. Cyprinodont fishes of the genus *Fundulus* in the West Indies, with description of a new subspecies from Cuba, by Luis René Rivas. Pp. 215–222, pl. 14. Oct. 19, 1948.

No. 3230. A new crayfish of the genus *Cambarus* from Texas, with notes on the distribution of *Cambarus fodiens* (Cottle), by Horton H. Hobbs, Jr. Pp. 223–231, fig. 17. Nov. 16, 1948.

No. 3231. Report on the Pycnogonida collected by the *Albatross* in Japanese waters in 1900 and 1906, by Joel W. Hedgpeth. Pp. 233–321, figs. 18–51. Mar. 14, 1949.

No. 3232. Mammals of northern Colombia. Preliminary report No. 4: Monkeys (Primates), with taxonomic revisions of some forms, by Philip Hershkovitz. Pp. 323–427, pls. 15–17, figs. 52–59. May 10, 1949.

No. 3233. Bees from Central America, principally Honduras, by T. D. A. Cockerell. Pp. 429–490. May 25, 1949.

No. 3234. A generic revision of the treehoppers of the tribe Ceresini in America north of Mexico, based on a study of the male genitalia, by John S. Caldwell. Pp. 491–521, pls. 18–23. May 10, 1949.

VOLUME 99

No. 3235. A further contribution to the ichthyology of Venezuela, by Leonard P. Schultz. Pp. 1–211, pls. 1–3, figs. 1–20. May 10, 1949.

No. 3236. The weevils of the genus *Tachygonus* in the United States National Museum, with descriptions of new species, by Oscar Monte. Pp. 213–227, figs. 21–32. May 25, 1949.

No. 3237. The species of ichneumon-flies of the genus *Cardiochiles* occurring in America north of Mexico, by Ying-Tou Mao. Pp. 229–266, pls. 4–5. Mar. 21, 1949.

No. 3238. A revision of the mites of the family Cheyletidae in the United States National Museum, by Edward W. Baker. Pp. 267–320, pls. 6–17. Apr. 14, 1949.

No. 3239. A new species of copepod of the genus *Corycaeus* from the North American coast, by Mildred Stratton Wilson. Pp. 321–326, pl. 18. June 10, 1949.

No. 3240. New buprestid beetles from Mexico, Central and South America, and the West Indies, by W. S. Fisher. Pp. 327–351. Apr. 26, 1949.

No. 3241. The Pima County (Arizona) meteorite, by E. P. Henderson and Stuart H. Perry. Pp. 353–355, pls. 19, 20. Apr. 27, 1949.

No. 3242. The Linwood (Nebraska) meteorite, by E. P. Henderson and Stuart H. Perry. Pp. 357–360, pls. 21–24. Apr. 27, 1949.

No. 3243. The Nearctic species of the family Stephanidae (Hymenoptera), by Henry Townes. Pp. 361–370, pl. 25. June 10, 1949.

No. 3244. Nine new xystodesmid millipeds from Virginia and West Virginia, with records of established species, by Richard L. Hoffman. Pp. 371–389, pls. 26, 27. June 14, 1949.

No. 3245. A review of the copepod genus *Paranthessius* Claus, by Paul L. Illg. Pp. 391–428, figs. 33–37. May 10, 1949.

No. 3246. Mammals of northern Colombia. Preliminary report No. 5: Bats (Chiroptera), by Philip Hershkovitz. Pp. 429–454, fig. 38. May 10, 1949.

No. 3247. New species and records of staphylinid beetles from Formosa, Japan, and South China, by Malcolm Cameron. Pp. 455–477. June 14, 1949.

BULLETINS

No. 100, vol. 14, pt. 3. Report on the Echinoidea collected by the United States Fisheries steamer *Albatross* during the Philippine Expedition, 1907-1910. Part 3: The Echinoneidae, Echinolampadidae, Clypeastridae, Arachnoididae, Laganidae, Fibulariidae, Urechinidae, Echinocorythidae, Palaeostomatidae, Micrasteridae, Palaeopneustidae, Hemiasteridae, and Spatangidae, by Theodor Mortensen. Pp. i–iii, 93–140. Oct. 29, 1949.

No. 195. Life histories of North American nuthatches, wrens, thrashers, and their allies. Order Passeriformes, by Arthur Cleveland Bent. Pp. i–xi, 1–475, 90 pls. July 7, 1948.

No. 196. Life histories of North American thrushes, kinglets, and their allies. Order Passeriformes, by Arthur Cleveland Bent. Pp. i–viii, 1–454, 51 pls. June 28, 1949.

CONTRIBUTIONS FROM THE UNITED STATES NATIONAL HERBARIUM
VOLUME 29

Part 5. A revision of *Macrocarpaea*, a Neotropical genus of shrubby gentians, by Joseph Ewan. Pp. i–vii, 209–249, pls. 1–5. Aug. 23, 1948.

Part 6. New grasses from Honduras, Colombia, Venezuela, Ecuador, Bolivia, and Brazil, by Jason R. Swallen. Pp. i–iii, 251–276. Feb. 18, 1949.

PUBLICATIONS OF THE BUREAU OF AMERICAN ETHNOLOGY

The editorial work of the Bureau continued under the immediate direction of the editor, M. Helen Palmer. During the year the following publications were issued:

REPORT

Sixty-fifth Annual Report of the Bureau of American Ethnology, 1947–1948. 32 pp.

PUBLICATIONS OF THE INSTITUTE OF SOCIAL ANTHROPOLOGY

No. 8. Sierra Popoluca speech, by Mary L. Foster and George M. Foster. 45 pp.

No. 9. The Terena and the Caduveo of southern Mato Grosso, Brazil, by Kalervo Oberg. 72 pp., 24 pls., 4 maps, 2 charts.

PUBLICATIONS OF THE FREER GALLERY OF ART

OCCASIONAL PAPERS: VOLUME 1

No. 2. Paintings, pastels, drawings, prints, and copper plates by and attributed to American and European artists, together with a list of original Whistleriana, in the Freer Galley of Art, by Burns A. Stubbs. 152 pp., 20 pls. (Publ. 3905.) Aug. 6, 1948.

REPORT OF THE AMERICAN HISTORICAL ASSOCIATION

The annual reports of the American Historical Association are transmitted by the Association to the Secretary of the Smithsonian Institution and are communicated by him to Congress, as provided by the act of incorporation of the Association. The following report volumes were issued this year:

Annual Report of the American Historical Association for 1943. Vol. 2, Writings on American History, 1939 and 1940.

Annual Report of the American Historical Association for 1945:

Vol. 2, Spain in the Mississippi Valley, 1765–1794. Pt. 1, The Revolutionary period, 1765–1781.

Vol. 3, Spain in the Mississippi Valley, 1765–1794. Pt. 2, Postwar decade, 1782–1791.

Annual Report of the American Historical Association for 1947. Vol. 1, Proceedings.

The following were in press at the close of the fiscal year; Annual Report of the American Historical Association for 1945. Vol. 4, Spain in the Mississippi Valley, 1765–1794. Pt. 3, Problems of frontier defense, 1792–1794; Annual Report of the American Historical Association for 1948. Vol. 1, Proceedings.

REPORT OF THE NATIONAL SOCIETY, DAUGHTERS OF THE AMERICAN REVOLUTION

The manuscript of the Fifty-first Annual Report of the National Society, Daughters of the American Revolution, was transmitted to Congress, in accordance with law, February 9, 1949.

APPROPRIATION FOR PRINTING AND BINDING

The congressional appropriation for printing and binding for the past year was entirely obligated at the close of the year. The appropriation for the coming fiscal year ending June 30, 1950, totals $103,000, allotted as follows:

General administration (Annual Report of the Board of Regents; Annual Report of the Secretary)	$18, 500
National Museum	36, 200
Bureau of American Ethnology	21, 500
National Air Museum	3, 000
Service division (Annual Report of the American Historical Association; blank forms; binding; Museum print shop)	23, 800
	103, 000

Respectfully submitted.

W. P. True, *Chief, Editorial Division.*

Dr. A. Wetmore,
Secretary, Smithsonian Institution.

REPORT OF THE EXECUTIVE COMMITTEE OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION

FOR THE YEAR ENDED JUNE 30, 1949

To the Board of Regents of the Smithsonian Institution:

Your executive committee respectfully submits the following report in relation to the funds of the Smithsonian Institution, together with a statement of the appropriations by Congress for the Government bureaus in the administrative charge of the Institution.

SMITHSONIAN ENDOWMENT FUND

The original bequest of James Smithson was £104,960 8s 6d—$508,318.46. Refunds of money expended in prosecution of the claim, freights, insurance, etc., together with payment into the fund of the sum of £5,015, which had been withheld during the lifetime of Madame de la Batut, brought the fund to the amount of $550,000.

Since the original bequest, the Institution has received gifts from various sources, the income from which may be used for the general work of the Institution. These, including the original bequest, plus savings, are listed below, together with the income for the present year.

ENDOWMENT FUNDS

(Income for unrestricted use of the Institution)

Partly deposited in United States Treasury at 6 percent and partly invested in stocks, bonds, etc.

	Investment	Income present year
Parent fund (original Smithson bequest, plus accumulated savings)	$728,878.50	$43,710.56
Subsequent bequests, gifts, etc., partly deposited in the U. S. Treasury and partly invested in the consolidated fund:		
Avery, Robert S., and Lydia, bequest fund	54,072.23	2,527.92
Endowment fund	337,608.80	14,220.74
Habel, Dr. S., bequest fund	500.00	30.00
Hachenberg, George P. and Caroline, bequest fund	4,080.11	171.87
Hamilton, James, bequest fund	2,909.54	167.26
Henry, Caroline, bequest fund	1,226.97	51.70
Hodgkins, Thomas G., (general) gift	146,418.02	8,241.27
Porter, Henry Kirke, memorial fund	290,547.80	12,238.39
Rhees, William Jones, bequest fund	1,069.95	55.65
Sanford, George H., memorial fund	2,003.12	104.04
Witherspoon, Thomas A., memorial fund	130,922.14	5,514.70
Special fund, stock in reorganized closed banks	2,280.00	160.00
Total	973,638.68	43,483.54
Grand total	1,702,517.18	87,194.10

The Institution holds also a number of endowment gifts, the income of each being restricted to specific use. These, plus accretions to date, are listed below, together with income for the present year.

	Investment	Income present year
Abbott, William L., fund, for investigations in biology	$102,949.49	$4,276.13
Arthur, James, fund, for investigations and study of the sun and lecture on same	40,573.48	1,709.05
Bacon, Virginia Purdy, fund, for traveling scholarship to investigate fauna of countries other than the United States	50,827.58	2,140.95
Baird, Lucy H., fund, for creating a memorial to Secretary Baird	24,426.07	1,028.88
Barstow, Frederick D., fund, for purchase of animals for Zoological Park	1,014.26	42.73
Canfield Collection fund, for increase and care of the Canfield collection of minerals	38,801.89	1,634.41
Casey, Thomas L., fund, for maintenance of the Casey collection, and promotion of researches relating to Coleoptera	9,305.19	391.95
Chamberlain, Francis Lea, fund, for increase and promotion of Isaac Lea collection of gems and mollusks	28,569.00	1,203.39
Eickemeyer, Florence Brevoort, fund, for preservation and exhibition of the photographic collection of Rudolph Eickemeyer, Jr	514.66	21.68
Hillyer, Virgil, fund, for increase and care of Virgil Hillyer collection of lighting objects	6,667.55	280.85
Hitchcock, Dr. Albert S., library fund, for care of Hitchcock Agrostological Library	1,600.81	67.44
Hodgkins fund, specific, for increase and diffusion of more exact knowledge in regard to nature and properties of atmospheric air	100,000.00	6,000.00
Hrdlička, Aleš and Marie, fund, to further researches in physical anthropology and publication in connection therewith	18,657.75	785.91
Hughes, Bruce, fund, to found Hughes alcove	19,418.98	817.96
Long, Annette and Edith C., fund, for upkeep and preservation of Long collection of embroideries, laces, etc	550.87	23.20
Maxwell, Mary E., fund, for care, etc., of Maxwell collection	10,001.67	421.29
Myer, Catherine Walden, fund, for purchases of first-class works of art for the use and benefit of the National Collection of Fine Arts	19,230.71	810.04
Strong, Julia D., bequest fund, for benefit of the National Collection of Fine Arts	10,143.51	427.27
Pell, Cornelia Livingston, fund, for maintenance of Alfred Duane Pell collection	7,519.99	316.76
Poore, Lucy T. and George W., fund, for general use of the Institution when principal amounts to $250,000	114,451.10	5,478.83
Rathbun, Richard, memorial fund, for use of division of U. S. National Museum containing Crustacea	10,790.25	454.51
Reid, Addison T., fund, for founding chair in biology, in memory of Asher Tunis	30,263.63	1,506.88
Roebling Collection fund, for care, improvement, and increase of Roebling collection of minerals	122,439.01	5,157.39
Rollins, Miriam and William, fund, for investigations in physics and chemistry	95,262.90	4,008.69
Smithsonian employees' retirement fund	34,364.54	1,447.51
Springer, Frank, fund, for care, etc., of Springer collection and library	18,192.99	766.33
Walcott, Charles D. and Mary Vaux, research fund, for the development of geological and paleontological studies and publishing results thereof	381,676.84	18,717.37
Younger, Helen Walcott, fund, held in trust	46,599.76	3,716.66
Zerbee, Frances Brinckle, fund, for endowment of aquaria	962.30	40.53
Total	1,345,776.78	63,694.59

FREER GALLERY OF ART FUND

Early in 1906, by deed of gift, Charles L. Freer, of Detroit, gave to the Institution his collection of Chinese and other Oriental objects of art, as well as paintings, etchings, and other works of art by Whistler, Thayer, Dewing, and other artists. Later he also gave funds for the construction of a building to house the collection, and finally in his will, probated November 6, 1919, he provided stock and securities to the estimated value of $1,958,591.42, as an endowment fund for the operation of the Gallery.

The above fund of Mr. Freer was almost entirely represented by 20,465 shares of stock in Parke, Davis & Co. As this stock advanced in value, much of it was sold and the proceeds reinvested so that the fund now amounts to $6,092,775.69 in a selected list of securities classified later.

SUMMARY OF ENDOWMENTS

Invested endowment for general purposes	$1, 702, 517. 18
Invested endowment for specific purposes other than Freer Endowment	1, 345, 776. 78
Total invested endowment other than Freer endowment	3, 048, 293. 96
Freer invested endowment for specific purposes	6, 092, 775. 69
Total invested endowment for all purposes	9, 141, 069. 65

CLASSIFICATION OF INVESTMENTS

Deposited in the U. S. Treasury at 6 percent per annum, as authorized in the U. S. Revised Statutes, sec. 5591		$1, 000, 000. 00
Investments other than Freer endowment (cost or market value at date acquired):		
Bonds	$683, 834. 86	
Stocks	1, 245, 283. 78	
Real estate and first-mortgage notes	62, 790. 83	
Uninvested capital	56, 384. 49	
		2, 048, 293. 96
Total investments other than Freer endowment		3, 048, 293. 96
Investment of Freer endowment (cost or market value at date acquired):		
Bonds	$2, 925, 452. 84	
Stocks	3, 133, 881. 17	
Uninvested capital	33, 441. 68	
		6, 092, 775. 69
Total investments		9, 141, 069. 65

CASH BALANCES, RECEIPTS, AND DISBURSEMENTS DURING FISCAL YEAR 1949[1]

Cash balance on hand June 30, 1948		$563,847.37
Receipts other than Freer endowment:		
Income from investments	$156,219.10	
Gifts and contributions	48,143.71	
Sales of publications	33,281.09	
Miscellaneous	11,566.10	
Total receipts other than Freer endowment		249,210.00
Receipts from Freer endowment:		
Income from investments	$282,265.48	
Total receipts from Freer endowment		282,265.48
Total		1,095,322.85
Disbursements other than Freer endowment:		
Administration	$43,422.75	
Publications	45,618.12	
Library	3,977.10	
Buildings—care, repairs, alterations	136.00	
Custodian fees, etc	3,293.15	
Miscellaneous	3,822.77	
Researches	127,412.84	
Smithsonian Retirement System	3,608.28	
Purchases of securities (net)	4,508.63	
Total disbursements other than Freer endowment		235,799.64
Disbursements from Freer endowment:		
Salaries	$83,480.37	
Purchases for collections	125,050.00	
Custodian fees, etc	10,858.00	
Miscellaneous	26,594.80	
Purchases of securities (net)	80,631.18	
Total disbursements from Freer endowment		326,614.35
Investment of current funds in U. S. Bonds		2,578.13
Total disbursements		564,992.12
Cash balance June 30, 1949		530,330.73
Total		1,095,322.85

[1] This statement does not include Government appropriations under the administrative charge of the Institution.

ASSETS

Cash:			
United States Treasury current account	$360, 201. 95		
In banks and on hand	170, 128. 78		
	530, 330. 73		
Less uninvested endowment funds	89, 826. 17		
		$440, 504. 56	
Travel and other advances		11, 585. 42	
Cash invested (U. S. Treasury notes)		502, 815. 37	
			$954, 905. 35
Investments—at book value:			
Endowment funds:			
Freer Gallery of Art:			
Stocks and bonds	$6, 059, 334. 01		
Uninvested capital	33, 441. 68		
		6, 092, 775. 69	
Investments at book value other than Freer:			
Stocks and bonds	$1, 929, 118. 64		
Real estate and mortgage notes	62, 790. 83		
Uninvested capital	56, 384. 49		
Special deposit in U. S. Treasury. Interest at 6 percent	1, 000, 000. 00		
		3, 048, 293. 96	
			9, 141, 069. 65
			10, 095, 975. 00

UNEXPENDED FUNDS AND ENDOWMENTS

Unexpended funds:			
Income from Freer Gallery of Art endowment			393, 411. 62
Income from other endowments:			
Restricted		$187, 425. 28	
General		85, 599. 74	
			273, 025. 02
Gifts and grants			288, 468. 71
			954, 905. 35
Endowment funds:			
Freer Gallery of Art		$6, 092, 775. 69	
Other:			
Restricted	$1, 345, 776. 78		
General	1, 702, 517. 18		
		3, 048, 293. 96	
			9, 141, 069. 65
			10, 095, 975. 00

The practice of maintaining savings accounts in several of the Washington banks and trust companies has been continued during the past year, and interest on these deposits amounted to $824.74.

In many instances, deposits are made in banks for convenience in collection of checks, etc., and later such funds are withdrawn and deposited in the United States Treasury.

Disbursement of funds is made by check signed by the Secretary of the Institution and drawn on the United States Treasury.

The foregoing report relates only to the private funds of the Institution.

The Institution gratefully acknowledges gifts from the following:

American Philosophical Society, for Iroquois research.
W. W. Corcoran, for B. F. Starr.
Eickemeyer Estate, for preservation, etc., of Rudolph Eickemeyer photographic collection.
E. P. Killip, for use of Department of Botany.
National Academy of Sciences, for study of flora of Okinawa.
National Geographic Society, expedition to western Panamá.
Research Corporation.
John A. Roebling, additional contribution for researches in radiation.

The following appropriations were made by Congress for the Government bureaus under the administrative charge of the Smithsonian Institution for the fiscal year 1949:

Salaries and expenses	$2, 259, 000. 00
National Zoological Park	528, 848. 00

In addition, funds were transferred from other Departments of the Government for expenditure under direction of the Smithsonian Institution as follows:

Cooperation with the American Republics (transfer from the State Department)	$97, 900. 00
Working Fund, transferred from the National Park Service, Interior Department, for archeological investigations in River Basins throughout the United States	$118, 500. 00

The Institution also administers a trust fund for partial support of the Canal Zone Biological Area, located on Barro Colorado Island in the Canal Zone.

The report of the audit of the Smithsonian private funds follows:

SEPTEMBER 14, 1949.

TO THE BOARD OF REGENTS,
SMITHSONIAN INSTITUTION,
Washington 25, D. C.

We have examined the accounts of the Smithsonian Institution relative to its private endowment funds and gifts (but excluding the National Gallery of Art and other departments, bureaus, or operations administered by the Institution under Federal appropriations) for the year ended June 30, 1949. 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.

The Institution maintains its accounts on a cash basis and does not accrue income and expenses. Land, buildings, furniture, equipment, works of art, living and other specimens and certain sundry property are not included in the accounts of the Institution.

In our opinion, the accompanying financial statements present fairly the position of the private funds and the cash and investments thereof of the Smithsonian Institution at June 30, 1949 (excluding the National Gallery of Art and other departments, bureaus or operations administered by the Institution under Federal appropriations) and the cash receipts and disbursements 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.

Respectfully submitted.

ROBERT V. FLEMING,
VANNEVAR BUSH,
CLARENCE CANNON,
Executive Committee.

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