REPORT OF THE SECRETARY OF THE SMITHSONIAN INSTITUTION

AND

FINANCIAL REPORT OF THE EXECUTIVE COMMITTEE OF THE BOARD OF REGENTS

1940

SMITHSONIAN INSTITUTION
WASHINGTON, D. C.

REPORT OF THE SECRETARY OF THE SMITHSONIAN INSTITUTION

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FINANCIAL REPORT OF THE EXECUTIVE COMMITTEE OF THE BOARD OF REGENTS

FOR THE

YEAR ENDED JUNE 30

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June 30, 1940

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DEPARTMENT OF ENGINEERING AND INDUSTRIES—Continued.

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REPORT OF THE SECRETARY OF THE SMITHSONIAN INSTITUTION

C. G. ABBOT

FOR THE YEAR ENDED JUNE 30, 1940

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 the Government bureaus under its administrative charge during the fiscal year ended June 30, 1940. The first 17 pages contain a summary account of the affairs of the Institution, and appendixes 1 to 11 give more detailed reports of the operations of the 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 Exchanges, the National Zoological Park, the Astrophysical Observatory, the Division of Radiation and Organisms, the Smithsonian Library, and of the publications issued under the direction of the Institution. On page 109 is the financial report of the executive committee of the Board of Regents.

OUTSTANDING EVENTS

The number of visitors to the buildings of the Institution and the National Museum during the year reached a new record total—2,506,171. The construction of the new National Gallery of Art Building, presented to the Nation by the late Andrew W. Mellon and designated a bureau of the Institution, was brought nearly to completion, and it is expected that the Gallery will be opened to the public early in 1941. The renovation of the galleries of the National Collection of Fine Arts, housed in the Natural History Building of the National Museum, was completed in October 1939, and the galleries were reopened to the public in that month. The Smithsonian radio program, "The World Is Yours," completed its fourth year on the air, continuing with undiminished popularity. An official Nation-wide poll taken during the year rated the program at the top of all noncommercial programs on all networks. In honor of Dr. John R. Swanton's fortieth year on the scientific staff of the Institution, there was published a volume of Essays in Historical Anthropology of North America prepared by members of the Institution's anthropological staff and dedicated to

Dr. Swanton. A bequest of approximately $130,000 came during the year from the estate of Mrs. Eleanor E. Witherspoon, of Washington, D. C. Two vacancies in the Board of Regents of the Institution were filled by the appointment of Senator Bennett Champ Clark, of Missouri, and Vannevar Bush, of Washington, D. C.

The enormous task of revising all solar-constant results from all observing stations from 1923 to the present was nearly completed at the close of the year, and it is expected to publish the final values during the coming year. The Division of Radiation and Organisms carried forward valuable experiments in the fundamental phenomenon of photosynthesis. Working plans have been prepared for the proposed Handbook of South American Indians to be published by the Institution under the editorship of Dr. Julian H. Steward.

Dr. W. M. Mann directed the Smithsonian-Firestone Expedition to Liberia for the purpose of collecting live animals for the National Zoological Park. Dr. Leonard P. Schultz accompanied the Navy Surveying Expedition to the Phoenix and Samoan Islands, bringing back 14,000 specimens of the fishes of that region. M. W. Stirling made a second archeological expedition to southeastern Mexico in cooperation with the National Geographic Society, uncovering many additional stone monuments, including one with an initial series date in the Maya calendar.

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

National Museum.—Appropriations for the maintenance and operation of the Museum for the year totaled $810,725, an increase of $32,345 over those for the previous year. Additions to the collections numbered 1,960 accessions, totaling 212,474 individual specimens, bringing the number of catalog entries in all departments to more than 17,000,000. Some of the outstanding accessions were: In anthropology, Eskimo and other artifacts from Siberia and northern Alaska, Bondu and Yoruba masks from West Africa and Nigeria, and a cast of a Neanderthal child skull from Uzbekistan; in biology, several varieties of seals from the Antarctic, collections of birds from Veracruz and Indochina, Mexican reptiles and amphibians collected by Dr. Hobart M. Smith, 14,000 fishes taken by Dr. Leonard P. Schultz in the Phoenix and Samoan Islands, the E. D. Ball collection of 75,000 specimens of Hemiptera, and 600 marine invertebrates from southeast Greenland collected by the Bartlett Greenland Expedition of 1939; in geology, a flawless aquamarine crystal weighing 347 grams, a 128-carat emerald crystal from Bahia, Brazil, and 495 Mexican minerals, a large collection of Paleozoic fossils made by Drs. G. A. Cooper and Josiah Bridge in 1939, and

25 original type specimens of fossil lizards received in exchange from the Peabody Museum of Natural History; in engineering and industries, a model of the *Yankee Clipper* and the first ticket issued to a fare-paying passenger on the initial public trans-Atlantic flight, a Gaulard and Gibbs transformer and an early Tesla motor, a collection of early incandescent lamps, and a Parsons turbine-electric generator; in history, the dress in the White House series worn by Dolly Madison, and many mementos, medals, and portraits of famous Americans, including Gen. Ulysses S. Grant, Gen. Philip H. Sheridan, Col. Charles A. Lindbergh, Madame Ernestine Schumann-Heink, and others. As usual, many expeditions were sent out in the furtherance of the Museum's work in anthropology, biology, and geology; these were largely financed by Smithsonian private funds or through cooperation with other organizations or individuals. Visitors to the various Museum buildings totaled 2,506,171, an all-time record for annual attendance. The year's publications included an annual report, 1 Bulletin, 1 Contributions from the United States National Herbarium, and 27 Proceedings papers. Twelve special exhibits were held under the auspices of various educational, scientific, and governmental agencies. Many members of the Museum staff participated actively in the Eighth American Scientific Congress held in Washington May 10 to 21, 1940.

National Gallery of Art.—At the annual meeting of the Board of Trustees held February 12, 1940, David K. E. Bruce was elected President and Ferdinand Lammot Belin Vice President of the Board for the ensuing year. New officials appointed during the year were Macgill James, Assistant Director, Charles Seymour, Jr., Curator of Sculpture, George T. Heckert, Assistant to the Administrator, and Sterling P. Eagleton, Chief Engineer and Building Superintendent. Satisfactory progress was made in organizing the Gallery staff, and this nucleus has been engaged in preparatory work, the compilation of catalogs, and the purchase of supplies and furniture. The Board of Trustees accepted a gift from The A. W. Mellon Educational and Charitable Trust of 11 celebrated paintings by early American artists, a first step toward setting up in the National Gallery a section devoted to the advancement and preservation of American art. The Board also accepted two fountain groups by Pierre Legros and Jean Baptiste Tubi, done in 1672 on orders of Louis XIV, one of which will be placed in each of the garden courts of the Gallery. Such work of repair and restoration of paintings as has been found necessary was done in New York by Stephen Pichetto, Consultant Restorer to the Gallery. A Publications Fund was established for the purpose of publishing cata-

logs, handbooks, color reproductions, post cards, and similar material for the benefit of the public when the Gallery is opened. It is hoped that construction of the Gallery building will be completed in November of 1940. Several months will be required for decorating the exhibition rooms and installing the collections, so that formal opening of the Gallery to the public is expected to take place about March of 1941. It is estimated that the total cost of the building and landscaping will exceed $15,000,000.

National Collection of Fine Arts.—The complete renovation of the exhibition galleries, begun during the previous fiscal year, was finished in October 1939 and the galleries were reopened to the public on the 4th of that month. New backgrounds of monk's cloth, repainting of all woodwork and reflectors to match the backgrounds, and renovation and backing of all pictures combined to put the entire National Collection in excellent condition. The nineteenth annual meeting of the Smithsonian Art Commission was held on December 5, 1939. One painting, Young Girl with Dog, by Edward Percy Moran, a bequest of Alfred Duane Pell, was accepted for the National Collection. Three miniatures were acquired through the Catherine Walden Myer Fund. Several art works were lent upon request to other museums and organizations. The following seven special exhibitions were held: The Fifth Annual Metropolitan State Art Contest, 1939, comprising 272 exhibits of paintings, sculpture, and prints; 29 pastel and oil paintings by Esteban Valderrama; a miniature by Juan de Dios Hoyos; 83 pieces of wood turnings by James L. Prestini; 24 portraits and 5 drawings by John Slavin; 153 paintings by 31 members of the Landscape Club of Washington, D. C.; and 103 miniatures by 61 members of the Pennsylvania Society of Miniature Painters.

Freer Gallery of Art.—Additions to the collections included Chinese bamboo, bronze, jade, marble, painting, and pottery; East Indian and Arabic manuscripts; Iranian (Persian) and Syro-Egyptian metal work; and Indian and Persian painting. Curatorial work was devoted to the study and recording of these new acquisitions and of other material already in the collection. In addition, 1,093 objects of similar character and 263 photographs of others were brought or sent to the Director for information concerning them, and written or oral reports upon them were made to the owners. Changes in exhibition involved 40 individual objects. Visitors for the year numbered 108,770. Eight illustrated lectures were given in the auditorium by members of the staff. Eleven groups were given instruction in the study rooms, and seven groups were given docent service in the exhibition galleries. John Bundy, Superintendent of the Gallery for more than 21 years, died August 18, 1939; he was succeeded by Weldon N. Rawley.

Bureau of American Ethnology.—M. W. Stirling, Chief, continued his archeological excavations in southeastern Mexico in cooperation with the National Geographic Society. At Tres Zapotes the chronology of the site was satisfactorily determined; at Cerro de Mesa 20 carved stone monuments were located, including one with an initial series date in the Maya calendar; and at La Venta 20 monuments were unearthed, including 5 colossal heads, several beautifully carved altars, and some stelae. Dr. J. R. Swanton devoted most of the year to assembling material on the ethnology and early history of the Caddo Indians of Louisiana, Arkansas, Texas, and Oklahoma. Dr. John P. Harrington conducted linguistic and ethnological studies of the Kiowa Apache at Anadarko and Apache, Okla., the Navaho at Window Rock, Ariz., the Chipewyan of eastern Alberta, Canada, the Sarcee of southern Alberta, the Carrier, Chilcotin, and Nicola on the upper Fraser River, the Tlinkit of southeastern Alaska, and the Atchat, or Eyak, of the Gulf of Alaska. Dr. Frank H. H. Roberts, Jr., continued excavations at the Lindenmeier site in northern Colorado, where much additional evidence of the presence of Folsom man was obtained. Dr. Julian H. Steward, as editor of the proposed Handbook of South American Indians, drew up a working outline for this project. Toward the end of the year he went to British Columbia to study the Carrier Indians. Henry B. Collins, Jr., continued working over the prehistoric Eskimo material that he excavated around Bering Strait in 1936. Dr. William N. Fenton conducted ethnobotanical studies among the Iroquois Indians of New York and Canada. Miss Frances Densmore, a collaborator of the Bureau, completed for publication several manuscripts on Indian music. The Bureau published an annual report and three bulletins. The library received 364 accessions, and a large amount of material was reclassified and reshelved.

International Exchange Service.—The Exchange Service serves as the official agency for the United States for the exchange with foreign countries of governmental and scientific publications. It handled during the year 639,344 packages of such publications, weighing 527,545 pounds. These figures show a considerable decrease from the previous year, owing to the enforced curtailment of shipments to many foreign countries because of war conditions. At the close of the year, the exchange of publications was suspended between the United States and all European countries except Great Britain, Finland, and the Soviet Republic. Sets of United States governmental documents are now sent through the Exchange Service to 104 foreign depositories, and 104 copies of the Congressional Record and the Federal Register are sent to foreign countries in exchange for their official journals.

National Zoological Park.—A new restaurant building was begun during the year under an allotment of $90,000 from the P. W. A. It is expected to be completed during the fall of 1940. Other improvements included the construction of 9 new paddocks for various animals; a series of waterfowl ponds; an enclosure for lizards, snakes, crocodilians, and turtles; construction of 9,000 feet of curbing and 2,050 square feet of walks; and extensive planting of trees and shrubs in newly developed areas. Dr. Mann directed the Smithsonian-Firestone Expedition to Liberia, bringing back nearly 200 animals for the collections, including many rare forms. Malcolm Davis brought back a number of animals from India, including an Indian rhinoceros, the first to be shown at the Zoo. He also accompanied Admiral Byrd's Antarctic Expedition, bringing back a number of penguins for exhibition at the Zoo. Visitors for the year totaled 2,129,600, including classes from 628 different schools from 21 States and the District of Columbia. Of particular interest among the many gifts of the year were a pair of black bears from the Pennsylvania Game Commission, obtained through Carl La Barre, of Portland, Pa.; three Finsches' tree kangaroos from Richard Archbold, of the American Museum of Natural History, New York; a pair of yak from the Department of Mines and Resources, Dominion of Canada, through Hoyes Lloyd; and a group of pheasants from Carlo Zeimet, of Washington, D. C. There were 55 mammals born, 28 birds hatched, and 22 reptiles born or hatched during the year. The total number of animals in the collection was 2,550, representing 762 different species. The Zoo's greatest need is for three new buildings to replace antiquated structures now in use.

Astrophysical Observatory.—The work of the Observatory in studying the radiation of the sun has been continued during the year at Washington and at the three observing stations at Tyrone, N. Mex., Table Mountain, Calif., and Montezuma, Chile. Work has been continued throughout the year on the complete revision of all results on the solar constant of radiation from all stations and from 1923 to the present time. Many small inconsistencies requiring extensive study made progress slow in preparing final tables of mean values of the solar constant. It is now hoped to publish these tables as volume 6 of the Annals of the Observatory during the coming year. Mathematical investigations at Harvard and at the Massachusetts Institute of Technology tend to confirm the reality of periodicities in solar variation as found by Dr. Abbot. Six lectures on his studies of solar radiation were given by Dr. Abbot at the Harvard College Observatory, and the first four are in course of publication in the Bulletin of the American Meteorological Society. Dr. H. Arctowski, eminent meteorologist of Poland, who was in Washington when his

country was conquered and his property lost, was retained on the staff of the Observatory for 1 year through funds provided by John A. Roebling. Soon after beginning his work Dr. Arctowski became convinced of the reality of solar variation and that it is the major factor in weather, and he published two papers summarizing his findings. Dr. Abbot endeavored to evaluate the separate influences produced on weather by long-range solar periodicities. It soon appeared that considerable weather changes were produced by the periodicities, and changes in phase of the weather responses were found to be due to seasonal influences. Five-year forecasts, using only meteorological periodicities antedating 1935, showed a marked correlation between the forecast and the event. In the forecast for precipitation at Peoria, Ill., a correlation coefficient of 70 ± 5 percent was found between prediction and event. It is hoped that further study may improve the 5-year synthetic forecasts.

Division of Radiation and Organisms.—In continuation of its investigations on the relation of light to plant growth, the Division carried forward a number of promising experiments, particularly in the field of photosynthesis. A large number of simultaneous measurements were made of the rate of carbon dioxide uptake and the intensity of fluorescence during the induction period of photosynthesis. These showed very interesting results, and further work along this line is proposed, for it is felt that fluorescence is a useful tool in the study of the mechanism of photosynthesis. Respiration and chlorophyll studies have been continued with the recording spectrographic carbon dioxide apparatus. The perfecting of instruments and technique has progressed to a point where detailed work on the problems relating to the genesis of chlorophyll and the beginning of photosynthesis may be carried on. A standardized technique has been worked out for the extraction of growth substances from the oat seedling which has proved to have a number of advantages over other methods. A number of biochemical substances and plant extracts have been tested in the study of the growth of excised oat shoots and leaves. The maximum light sensitivity of the oat mesocotyl was shown to occur in the red region of the spectrum. Algae exposed four times to stimulative amounts of certain wave lengths of ultraviolet light showed 4 to 4.8 times the growth rate (expressed as number of cells) of the control cultures. The stimulated cells were less sensitive to lethal amounts of ultraviolet than the unstimulated cells. This and other results of experiments on the effects of ultraviolet on algae will be published during the coming year. Three papers by members of the Division's staff were published during the year.

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THE ESTABLISHMENT

The Smithonian 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

Changes in the Board of Regents during the year included the appointment on January 4, 1940, by the Vice President, as President of the Senate, of Senator Bennett Champ Clark, of Missouri, to succeed Senator M. M. Logan, of Kentucky, who died October 3, 1939, and the appointment by joint resolution of Congress approved April 5, 1940, of Vannevar Bush, of Washington, D. C., as a citizen regent to succeed John C. Merriam, who resigned December 14, 1939.

The roll of regents at the close of the year was as follows: Charles Evans Hughes, Chief Justice of the United States, Chancellor; John N. Garner, Vice President of the United States; members from the Senate—Charles L. McNary, Alben W. Barkley, Bennett Champ Clark; members from the House of Representatives—Charles L. Gifford, Clarence Cannon, William P. Cole, Jr.; citizen members—Frederic A. Delano, Washington, D. C.; R. Walton Moore, Virginia; Roland S. Morris, Pennsylvania; Harvey N. Davis, New Jersey; Arthur H. Compton, Illinois; and Vannevar Bush, Washington, D. C.

Proceedings.—The annual meeting of the Board of Regents was held on January 11, 1940. The regents present were Chief Justice Charles Evans Hughes, Chancellor; John N. Garner, Vice President of the United States; Senator Charles L. McNary; Representatives Charles L. Gifford, Clarence Cannon, and William P. Cole, Jr.; Citizen Regents Frederic A. Delano, R. Walton Moore, Harvey N. Davis, and Arthur H. Compton; and the Secretary, Dr. Charles G. Abbot.

The Board received and accepted the annual report of the Secretary, covering activities during the year of the parent institution and of the several Government branches; the report by Mr. Delano of the executive committee, covering financial statistics of the Institution, and of the permanent committee, which handles matters connected with the investment of the Institution's various funds; and the an-

nual report of the Smithsonian Art Commission. Mr. Delano also presented the report of the Smithsonian Gallery of Art Commission, established by the act of May 17, 1938, providing a site for the proposed Smithsonian Gallery of Art and for other purposes including the selection of designs, by competition or otherwise, for the building. The Deficiency Act of June 25, 1938, appropriated $40,000 for the use of the Commission. The Board received the report for consideration and approved the selection of Eliel Saarinen as the architect of the building.

The Board formally approved the acceptance of the Samuel H. Kress gift of Italian art by the Smithsonian Institution for the National Gallery of Art, and also a plan for old-age and incapacitation pensions for the private employees in the Institution.

In his usual special report the Secretary mentioned briefly the more important activities carried on by the Institution and its branches during the year.

FINANCES

A statement on finances will be found in the report of the Executive Committee of the Board of Regents, page 109.

MATTERS OF GENERAL INTEREST

SMITHSONIAN RADIO PROGRAM

June 9, 1940, marked the completion of 4 years of the Smithsonian radio program, "The World Is Yours." A pioneer in the field of popularizing science, invention, history, and art by means of dramatized radio broadcasts, this series has been put on the air through the cooperation of the Smithsonian Institution, the United States Office of Education, the National Broadcasting Co., and the Works Projects Administration. Beginning with only a few stations, "The World Is Yours" has steadily increased in popularity in all parts of the country until today it is carried every Sunday on some 80 stations of the N. B. C. red network. Over half a million letters have been received from listeners, the great majority of whom are enthusiastic in their commendation of the program.

The greatest tribute ever paid the series came in the spring of 1940. A leading radio-audience research service, upon completing a Nation-wide analysis of the size of the listening audiences of all programs on all networks, gave "The World Is Yours" the highest rating among all sustaining programs on the air. This is a very gratifying indication that science, history, and other cultural fields arouse Nation-wide interest when presented in popular form.

In selecting the program subjects, the Smithsonian Institution endeavors to create a well-rounded series that in the course of a year

will present to listeners topics relating to every major branch of science. Exploration, history, industrial progress, and art are also included, although less frequently, as coming within the scope of Smithsonian activities or exhibits. The list of subjects for the past fiscal year is as follows:

	1939
French Soldiers in the American Revolution	July 2
Red Men of the Great Plains	July 9
Birds in the Service of Man	July 16
Story of Fossils	July 23
Ryder, the Artist and Man	July 30
Stars in the Sky	Aug. 6
Early Air Mail	Aug. 13
Life of the Honey Bee	Aug. 20
Glaciers	Aug. 27
Story of the Street Car	Sept. 3
Lizards, Survivors of an Ancient Animal Kingdom	Sept. 10
Early American Fashions	Sept. 17
World's Most Valuable Trees	Sept. 24
King Salmon	Oct. 1
The Indians Who Met Columbus	Oct. 8
The Marvels of Sound	Oct. 15
Earthquakes	Oct. 22
Story of Portland Cement	Oct. 29
Germanna Ford—Crossroads of History	Nov. 5
The Great Apes	Nov. 12
Flying in Safety	Nov. 19
Our Debt to the Indians	Nov. 26
Exploring the Amazon for Plants	Dec. 3
Historical Gems	Dec. 10
Cortez, the Conquistador	Dec. 17
Christmas at Mount Vernon	Dec. 24
First New Year in the Colonies	Dec. 31
	1940
The March of Science	Jan. 7
Rise of the Railroad	Jan. 14
Harnessing Electromagnetism	Jan. 21
Volcanoes	Jan. 28
The American Bison and the Indian	Feb. 4
Story of Hard Money in Ancient Times	Feb. 11
Evolution of the Typewriter	Feb. 18
Pompeii Lives Again	Feb. 25
Radium	Mar. 3
Conquest of Noise	Mar. 10
Our Changing Wildlife	Mar. 17
American Pharmacy—First-line Defense Against Disease	Mar. 24
Opening of the Far West	Mar. 31
American Inventors	Apr. 7
Science in the Field	Apr. 14
Dinosaurs—Giants of the Past	Apr. 21
Story of Corn	Apr. 28
100 Years of Postage Stamps	May 5
Whistler: The Artist and the Man	May 12

	1940
Wilkes: An American Who Discovered a Continent	May 19
Story of Airships	May 26
How Fossils Serve Mankind	June 2
Bats—Animals that Fly	June 9
Natives of Hawaii	June 16
Bering in the Far North	June 23
The Smithsonian Today	June 30

From the beginning an attempt has been made to supply listeners who request it with supplementary information on the subject covered by each broadcast. This supplementary material has been issued in a number of forms—mimeographed, multigraphed, and printed—but the difficulty has been to print sufficient copies with the funds available. In October 1939 a new method was tried—that of publishing the "listener-aids" in magazine form through the cooperation of Columbia University Press and selling them to listeners at cost. This method proved to be very successful and was continued through June 30, when publication of the magazine was suspended for the summer months. After February, the articles printed in the magazine were written by Smithsonian experts and were illustrated with reproductions of photographs. The average circulation over the 9-month period was between 3,000 and 4,000 per week.

The W. P. A. financial assistance given during the 4 years the program has been on the air was withdrawn at the close of the past year. The W. P. A. funds had been used to pay the salaries of the production and music directors, a large proportion of the actors, and all of the clerical force in Washington who handled "The World is Yours" mail. Rather than let the program die for lack of funds, N. B. C. generously agreed to finance all the production costs for the coming year, so that hereafter "The World is Yours" will be presented as an N. B. C. public-service feature. The script writer will be paid by the Smithsonian, as for the past 2 years.

Much experience has been gained during the 4 years of the Smithsonian radio program. The quality of the broadcasts has been steadily improved, and their popularity has continued unabated. It is the hope of the Institution that "The World is Yours" may stay on the air indefinitely.

ANTHROPOLOGICAL PUBLICATION IN HONOR OF JOHN R. SWANTON'S FORTIETH YEAR WITH THE INSTITUTION

In 1900 Dr. John R. Swanton joined the scientific staff of the Bureau of American Ethnology, a branch of the Smithsonian Institution. The year 1940, therefore, marks the fortieth year of his association with the Institution, and to commemorate the occasion,

there was published a volume entitled "Essays in Historical Anthropology of North America." This book, comprising 600 pages of text, 16 halftone plates, and 36 text figures, contains 13 essays by members of the Institution's staff, an analysis of Dr. Swanton's own work by Dr. A. L. Kroeber, an introduction by Dr. Julian H. Steward, and a bibliography of Swanton's published contributions to anthropology. Each contributor, taking the field with which he has been particularly concerned, presents a survey of the anthropology of that area, stressing the historical phases of the study. As a whole, the volume covers a large part of the North American Continent, with, however, notable gaps such as the lower Mississippi region and the Pacific coast.

Dr. Swanton, knowing nothing of the preparation of this volume of essays in his honor, was invited on May 25, 1940, to attend a meeting of the staffs of the Institution and the Bureau of American Ethnology in the regents' room. At this meeting I presented him with a specially bound copy of the volume and expressed to him on behalf of his colleagues our admiration of his outstanding achievements in the field of historical anthropology. This was also expressed in the foreword to the published volume, prepared and signed by me, which reads:

> It is a real satisfaction for the Smithsonian Institution to publish this collection of papers in historical anthropology in honor of Dr. John R. Swanton, on the occasion of his fortieth year with the Institution. Diligence, modesty, and kindliness combine with great ability in his make-up, and lead all his colleagues and friends to love him, at the same time that they honor his scholarship and his basic contributions to American anthropology.
>
> While the attractive field of deductive speculation has in the past lured many American anthropologists, Swanton has been content to gather information and, sifting it, to lay a foundation where others may securely build. Treating particularly the history of cultures and of tribal movement in the Southeast since the discovery of America, Swanton's publications in this field will ever be the classic sources, basic to future advances.

WALTER RATHBONE BACON TRAVELING SCHOLARSHIP

The Walter Rathbone Bacon traveling scholarship of the Smithsonian Institution was held for a second year by Dr. Hobart M. Smith. The purpose of Dr. Smith's work, as stated last year, is the accumulation of specimens of reptiles and amphibians from Mexico, on the basis of which a herpetology of Mexico may be compiled and the biotic provinces of the country more accurately defined.

Collecting was continued during the year, and included the vicinity of Piedras Negras, Guatemala, and certain parts of the Mexican states of Chiapas, Oaxaca, Veracruz, Guerrero, Michoacán, Mexico, Puebla, and Hidalgo. By June 30, 1940, the collection numbered approximately 17,000 specimens, and represented some 475 species.

Eight new species of frogs, lizards, and snakes have been described by Dr. Smith from the collection. In addition, Dr. E. H. Taylor has described two other species of frogs from the collection.

SMITHSONIAN MAIN HALL EXHIBITS

In my last annual report it was stated that I had appointed a committee, consisting of Messrs. Mitman, chairman, Foshag, Friedmann, Setzler, and True, all of the Institution's staff, to recommend plans for exhibits in the Smithsonian main hall to illustrate all the work of the Institution and to make clear to visitors the relationship between the parent Institution and its various branches. The committee met weekly, beginning in the summer of 1939, and its first recommendation was for the complete redecoration of the hall, using a plastic paint that would give the effect of old stone. The exhibits and bookcases previously in the main hall were removed, and new walls were constructed at the east and west ends of the hall to conceal the steel bookstacks constructed many years ago for the use of the Smithsonian Library. The redecoration was completed in the spring of 1940.

The committee's recommendation as to the exhibits themselves, submitted on March 30, 1940, was approved by me, and the committee was instructed to carry out the plans, the entire exhibit to be ready in time for the next annual meeting of the Board of Regents on January 17, 1941.

The plan proposed by the committee comprised eight alcoves and four quadrants to be constructed completely around the hall, leaving the central aisle clear for the easy circulation of visitors. The eight alcoves are to portray in popular form the work of the Institution in astronomy, geology, biology, radiation and organisms, physical anthropology, cultural anthropology, engineering and industries, and art. The four quadrants, enclosing the central area of the hall, will illustrate the scope of Smithsonian activities, the National Zoological Park, history, and the organization and branches of the Institution. The former children's room, adjoining the main hall on the south, will be used to illustrate the Institution's work in the diffusion of knowledge.

At the close of the year, construction of the backgrounds for the exhibits was well under way, and the details of the exhibits themselves were being worked out for prompt installation when the construction work is completed.

NINTH ARTHUR LECTURE

The Arthur lecture, under the auspices of the Institution, was provided for in the will of the late James Arthur, of New York, who in 1931 left to the Smithsonian Institution a sum of money, part of the

income from which should be used for an annual lecture on some aspect of the study of the sun.

The ninth Arthur lecture, "Solar Prominences in Motion," by Robert R. McMath, Director of the McMath-Hulbert Observatory of the University of Michigan, was given in the auditorium of the National Museum on the evening of January 16, 1940. The lecture was illustrated with moving pictures of the sun. It will be published in full with illustrations in the 1940 Smithsonian Report.

The eight previous lectures in the series given under the Arthur fund were as follows:

1. The Composition of the Sun, by Henry Norris Russell, Professor of Astronomy at Princeton University. January 27, 1933.
2. Gravitation in the Solar System, by Ernest William Brown, Professor of Mathematics at Yale University. January 25, 1933.
3. How the Sun Warms the Earth, by Charles G. Abbot, Secretary of the Smithsonian Institution. February 26, 1934.
4. The Sun as a Typical Star, by Walter S. Adams, Director of the Mount Wilson Observatory. December 18, 1934.
5. Sun Rays and Plant Life, by Earl S. Johnston, Assistant Director of the Division of Radiation and Organisms, Smithsonian Institution. February 25, 1936.
6. Discoveries from Eclipse Expeditions, by Samuel Alfred Mitchell, Director of the Leander McCormick Observatory, University of Virginia. February 9, 1937.
7. The Sun and the Atmosphere, by Harlan True Stetson, Research Associate, Massachusetts Institute of Technology. February 24, 1938.
8. Sun Worship, by Herbert J. Spinden, Curator of American Indian Art and Primitive Cultures, Brooklyn Museums. February 21, 1939.

WITHERSPOON BEQUEST

In May 1940 the Institution received approximately $130,000, the residuary estate of the late Eleanor E. Witherspoon, of Washington, D. C. The paragraph in Mrs. Witherspoon's will relating to this bequest reads as follows:

> All the rest, residue and remainder of my estate, of every kind and description, real and personal, wheresoever and howsoever situated, now possessed or that may hereafter by acquired by me, including any lapsed or void legacy or devise, I give, devise and bequeath absolutely and in fee simple, unto the Smithsonian Institution, to be held by it as a fund to be known as the Thomas A. Witherspoon Memorial, in memory of my late beloved husband, with full power in said Institution of managing, controlling, investing and reinvesting the same, and sale of all or any part of the corpus thereof, and of any investment or reinvestment thereof, and the net income therefrom to be used for the advancement of human knowledge, with the single exception that no part of the corpus of the trust fund created in this Sixteenth Paragraph hereof or the income therefrom shall be used in collecting birds and animals dead or alive or for purposes of vivisection.

This generous bequest is a most welcome addition to the Institution's resources for research, exploration, and publication, and the wishes of the testatrix in respect to it will be scrupulously observed.

EXPLORATIONS AND FIELD WORK

In the furtherance of its investigations in many branches of science, the Smithsonian sent out or cooperated in 19 expeditions, which worked not only in many States in the United States but also in a number of foreign lands as well.

Dr. W. F. Foshag continued his survey of the mines and mineral localities of Mexico and added valuable mineralogical specimens to the Smithsonian's collection, now the greatest assemblage of Mexican ores and minerals extant. Dr. C. Lewis Gazin directed an expedition to central Utah in search of remains of extinct vertebrate ainmals and particularly to investigate the Cretaceous and Paleocene formations exposed along the east side of the Wasatch Plateau. Drs. Josiah Bridge and G. Arthur Cooper visited localities in Utah, Nevada, Texas, and the Midwest to collect Paleozoic fossils, needed to fill gaps in the National Museum collection, and also to examine and collect from Lower Ordovician sections in the Western States in order to obtain more exact information for use in the interregional correlation of these rocks. Dr. Cooper also spent a month studying the rocks and fossils of the Middle Ordovician in the Southern Appalachians. James H. Benn quarried out and brought to Washington for study a large slab of beautifully preserved fossil sea urchins (echinoids) from the bluffs bordering Chesapeake Bay at Port Republic, Md.

Dr. W. M. Mann conducted an expedition to the Argentine to collect live animals for the National Zoological Park; the trip resulted in the addition of 316 specimens to the collection, a number of which had never before been exhibited at the Zoo. Dr. Alexander Wetmore collected birds in southern Mexico, gaining information on the distribution of variable forms and on the movements of northern migrants. W. M. Perrygo collected birds and mammals in North Carolina to fill gaps in the National Museum's study collection, and H. G. Deignan visited European museums to study type material and other relevant specimens in connection with his work on the birds of Siam. Dr. Leonard P. Schultz accompanied the Navy Surveying Expedition to the Phoenix and Samoan Islands and obtained, in addition to 14,000 fishes, many hundreds of specimens of the fauna and flora of the region. At the invitation of Capt. G. Allan Hancock, Dr. Waldo L. Schmitt participated in the expedition to the north coast of South America, where boat dredging and shore collecting resulted in the acquisition of valuable specimens of marine life. Capt. Robert A. Bartlett, on his annual summer trip to the Arctic, collected for the Institution a quantity of material, including five specimens of a very rare 10-armed starfish. Austin H. Clark continued his study of the butterflies of Virginia, collecting many fine specimens including one species new to the Virginia fauna.

Ellsworth P. Killip collected plants in Colombia in continuation of the Smithsonian's special study of the flora of that country. About 11,000 specimens were obtained, including 300 numbers of ferns and more than 100 numbers each of orchids, aroids, grasses, and peppers.

Dr. Aleš Hrdlička spent several months studying anthropological material in the museums of England, Russia, Siberia, and France. The main object of the work in Russia, where most of his time was spent, was to examine such skeletal and cultural materials from Siberia as might have a bearing on the problem of Asiatic-American connections.

Dr. T. Dale Stewart continued excavations at Patawomeke, the Virginia Indian village visited by Capt. John Smith in 1608, discovering a type of pottery unlike that prevailing on the surface, and an ossuary. Dr. Waldo R. Wedel conducted an archeological survey in western Kansas to determine the extent of Puebloan influence in that area and to examine the prospects for injecting time perspective into the earlier archeological history of the region. Dr. Frank H. H. Roberts, Jr., continued excavations at the Lindenmeier site in northern Colorado, producing much further evidence of the presence of the ancient Folsom man, but failing again to discover any skeletal remains of Folsom man himself. Dr. William N. Fenton carried on ethnobotanical studies among the Iroquois of New York State and Canada, giving particular attention to Iroquois medicine.

PUBLICATIONS

The principal means of carrying out the "diffusion of knowledge," one of the Institution's primary functions, is its series of publications. From its private funds, the Institution issues the Smithsonian Miscellaneous Collections, a series containing all the scientific papers published by the Institution proper; from Government funds are issued the Smithsonian Annual Report (with general appendix reviewing progress in science), the Bulletins and Proceedings of the National Museum, the Bulletins of the Bureau of American Ethnology, the Annals of the Astrophysical Observatory, and Catalogs of the National Collection of Fine Arts. The Freer Gallery of Art series, Oriental Studies, is supported by Freer Gallery funds.

During the past year, the Institution and its branches issued a total of 78 publications, of which 45 were issued by the Institution proper, 30 by the National Museum, and 3 by the Bureau of American Ethnology. Information as to titles, authors, and other details of these publications will be found in the report of the Chief of the Editorial Division, appendix 11. The total number of publications distributed was 146,156.

LIBRARY

The accessions to the Smithsonian Library during the past year were 7,709 volumes and pamphlets, bringing the total holdings to 907,816, exclusive of several thousand incomplete or unbound items. The exchange work of the library was seriously handicapped by abnormal conditions abroad; many foreign publications have been suspended or discontinued altogether. Among the larger gifts of the year were 897 publications from the American Association for the Advancement of Science, 653 from the Geophysical Laboratory of the Carnegie Institution of Washington, 252 from the American Association of Museums, and 216 from James Townsend Russell, Jr. The staff made 26,422 periodical entries, cataloged 6,105 publications, prepared and filed 42,388 catalog and shelf list cards, loaned 11,745 publications to members of the staff of the Institution and its branches, and materially advanced the Union Catalog. Besides adding to the index of all Smithsonian publications and that of exchange relations, they began a third during the year; namely, a card index of all Smithsonian explorations. The needs of the library are for more funds for binding, more shelf room, and more personnel.

Respectfully submitted.

C. G. Abbot, *Secretary.*

APPENDIX 1

REPORT ON THE UNITED STATES NATIONAL MUSEUM

SIR: I have the honor to submit the following report on the condition and operation of the United States National Museum for the fiscal year ended June 30, 1940.

Funds provided for the maintenance and operation of the National Museum for the year totaled $810,725, or $32,345 more than for the previous fiscal year. The amount was reduced $5,500, however, by reason of a compulsory administrative reserve. In addition to the normal expenditures of the Museum, a deficiency appropriation made $270,000 available to cover expenses in changing the electric current for the Smithsonian group of buildings from direct to alternating, and for installing new elevators in the Smithsonian and Natural History Buildings.

COLLECTIONS

Additions to the great collections of the National Museum were received in 1,960 separate accessions, totaling 212,474 individual specimens. These were distributed among the five departments as follows: Anthropology, 5,233; biology, 168,673; geology, 33,921; engineering and industries, 2,019; and history, 2,628. For the most part these acquisitions were gifts from individuals or represented expeditions sponsored by the Smithsonian Institution. All are listed in detail in the full report on the Museum, published as a separate document, but the more important are summarized below. The total number of catalog entries in all departments now slightly exceeds 17,000,000.

Anthropology.—Archeological material came from many parts of the world: Eskimo and other artifacts from Siberia and northern Alaska, stone and shell artifacts from Guam and Mexico, objects from various parts of Egypt, and potsherds and casts from Argentina. In ethnology, many objects were received representing the cultures of the Eskimos and of various Plains and western Indian tribes. Africa was represented by Bondu and Yoruba masks from West Africa and Nigeria, respectively. The section of ceramics received 146 specimens; musical instruments, 12, including a violin designed and constructed in the anthropological laboratory by Nicola Reale, partly along the lines of a late Stradivarius; period art and textiles, 153, including many fine pieces of lace, ivory, and silver. In the division of physical anthropology the following accessions are noteworthy:

Cast of a Neanderthal child skull from Uzbekistan, a neolithic skull from Siberia, 8 trephined skulls from Peru, and casts of upper paleolithic crania from the Choukoutien caves near Peiping, China.

Biology.—A total 168,673 biological specimens were accessioned during the year, a number less than last year owing presumably to the disturbed condition of the world. Important mammalian material consisted of 8 Weddell and 2 crab-eating seals and 1 leopard-seal skull from the Antarctic, several cetacean skulls and fetuses from Alaska and the Antarctic, 101 bats from Mexico and Guatemala, 10 mammals from the Smithsonian-Firestone Expedition to Liberia, and many small mammals collected from North Carolina, District of Columbia, Maryland, and Massachusetts. The George S. Huntington collection of nonhuman skeletons was transferred from the Army Medical Museum.

Avian accessions from Veracruz and Indochina were outstanding. Over 1,000 bird specimens resulted from the field work conducted by the Museum in North Carolina. Other lots were representative of Italian, Chilean, Paraguayan, Antarctic, and Samoan forms.

Large collections of reptiles and amphibians were made in Mexico by Dr. Hobart M. Smith under the Walter Rathbone Bacon traveling scholarship of the Smithsonian Institution. Forty-one specimens from Liberia were sent by Dr. W. M. Mann from the Smithsonian-Firestone Expedition; 240 Maryland reptiles and amphibians were donated; and an important lot of Jamaican and Cayman Island material was purchased.

The most noteworthy ichthyological addition consisted of 14,000 fishes collected by Curator Leonard P. Schultz as a member of the Navy Surveying Expedition to the Phoenix and Samoan Islands in 1939. Dr. W. M. Mann forwarded 462 fishes collected at Gibi Mountain, Liberia. A large number of paratypes of fishes was received in exchange from the Academy of Natural Sciences of Philadelphia, the Bernice P. Bishop Museum at Honolulu, the Field Museum of Natural History at Chicago, and the British Museum of Natural History.

In insects several large collections were added: The E. D. Ball collection of approximately 75,000 specimens of Hemiptera; about 63,000 miscellaneous insects transferred from the Bureau of Entomology and Plant Quarantine, and 20,000 more received directly by specialists or additions resulting from collecting trips; about 30,000 specimens of mites (on 3,000 slides) from the collections of the late A. P. Jacot, transferred from the Forest Service; 6,000 Chinese insects from Dr. D. C. Graham; and an important collection of about 2,000 coccinellid beetles of the genus *Hippodamia* from the distinguished coleopterist Prof. Th. Dobzhansky.

Nearly 600 marine invertebrates from southeast Greenland came as a result of the Bartlett Greenland Expedition of 1939. In addition, there were received important collections of isopods, amphipods, sponges, pycnogonids, and worms, many representing new species or species new to the Museum collections. Mollusks came chiefly from Cuba, Hawaii, Jamaica, Samoa, Guam, Colombia, Ecuador, and the United States. Accessions of helminths included type material of much interest. Among the echinoderms was a fine series of starfishes, sea-urchins, brittle-stars, and holothurians from Antarctica, as well as noteworthy specimens from the Indo-Pacific.

About 23,600 plants, largely American, were received for inclusion in the National Herbarium, the largest lot being 5,200 specimens from Virginia, West Virginia, and Maine presented by H. A. Allard, of the United States Bureau of Plant Industry.

Geology.—Several additions to the mineralogical and petrological series were made possible by the Canfield, Roebling, and Chamberlain funds of the Smithsonian Institution. Among these were a flawless, pale blue, aquamarine crystal weighing 347 grams; a 128-carat emerald crystal from Bahia, Brazil; and 495 Mexican minerals, including rare arsenates and associated minerals and fine apatite crystals from Durango. These latter were collected by Curator W. F. Foshag on a trip to Mexico in 1939. About 3,000 mineral, ore, and rock specimens were transferred from the United States Military Academy. Forty-one individual specimens were contained in 21 accessions of meteorites received, 30 of these representing falls new to the collections.

The largest accession in the field of stratigraphic paleontology comprised the Paleozoic fossils collected by Assistant Curator G. A. Cooper and Dr. Josiah Bridge during their 1939 field work. Next in point of size is the celebrated old English Calvert collection of fossils procured by Martin L. Ehrmann. In addition, the biologic study collections were materially augmented with many fossil echinoderms, conodonts, Foraminifera, bryozoans, brachiopods, and mollusks received from generous donors. The most important exhibition specimen of the year was a 3- by 7-foot slab of Miocene standstone, discovered by Dr. Foshag at Scientists Cliff, Md., on which a rare species of echinoid covered the surface.

From a scientific standpoint, the most noteworthy accession in the division of vertebrate paleontology was an exchange from the Peabody Museum of Natural History of 25 original type specimens of fossil lizards, making the National Museum collection of these saurians the largest assemblage of its kind in this country. Field expeditions yielded four articulated lizard skeletons, two partial ceratopsian skulls from the North Horn formation, and a considerable number of fragmentary jaws and teeth from the Paleocene

of central Utah. The type of *Delphinus calvertensis* originally belonging to the National Institute, but lent to Louis Agassiz prior to 1852, was returned to the National collections by the Museum of Comparative Zoology.

Engineering and industries.—In the section of aeronautics additions were made to the collection of aircraft propellers, including one of the first controllable-pitch propellers issued for practical service. A model of the *Yankee Clipper* from the Pan American Airways System and the first ticket issued to a fare-paying passenger on the initial public trans-Atlantic flight also were received, as well as a number of aircraft models. To the section of electrical engineering and communications came the following: A Gaulard and Gibbs transformer and an early Tesla motor, both important contributions to the practical use of alternating current; a collection of early incandescent lamps; and a Parsons turbine-electric generator, thought to be the oldest of the original form of the Parsons turbine now in existence except for the first one at the Science Museum in London. Many miscellaneous objects pertaining to transportation, communication, metrology, mining, and metallurgy, tools and crafts, medicine and public health, and chemistry continue to come in as gifts and loans, always welcome additions to these sections. To the division of graphic arts there was transferred from the Government Printing Office an iron printing press invented by Peter Smith in 1822. Other interesting material received in this division pertained to motion-picture photography and projection, color photography, fine printing and bookmaking, and photoengraving.

History.—Over 2,600 objects of historic and antiquarian interest were accessioned, including mementos, medals, and portraits of such outstanding figures as General Lafayette, Gen. Ulysses S. Grant, Gen. Philip H. Sheridan, Maj. Gen. George H. Thomas, Col. Charles A. Lindbergh, Madame Ernestine Schumann-Heink, and others. The handsome dress in the White House series worn by Dolly Madison was presented to the Museum by Mrs. Charles D. Walcott and the Smithsonian Institution. A unique addition to the historical collection was the five flags flown by the *Yankee Clipper* on the first official flight of that plane from Port Washington, N. Y., to Southampton, England, and return in May 1939, presented through the Hon. R. Walton Moore. The numismatic collection was increased by 408 coins and medals and the philatelic collection by 2,038 foreign postage stamps, cards, and envelopes transferred from the Post Office Department. Also there came the famous A. Eugene Michel collection of postal stationery, which comprises 144 volumes of material containing about 40,000 specimens.

EXPLORATIONS AND FIELD WORK

The work of the staff in the field was wide and varied in scope and was carried on principally through funds made available through the Smithsonian Institution. The field studies thus arranged are one of the most important sources of new materials for the National Museum and result in new facts and information of many kinds.

Anthropology.—On April 15, 1939, Dr. Aleš Hrdlička, curator of physical anthropology, left New York on an anthropological trip to Europe, with particular emphasis on studies in Russia and Siberia. The main objects of a visit to London were to see the remains of early man from Palestine and whatever Siberian skeletal material there might be in the museums of that city. In France the main purpose was to see the newly established Museum of Man in Paris. In Russia and Siberia the chief objective was to examine such skeletal and cultural materials from Siberia as might have a bearing on the problem of Asiatic-American connections. The main part of the trip was in the Soviet Union, where the stay was divided between Leningrad, Moscow, and Irkutsk. In the anthropological institutes and museums of these cities, Dr. Hrdlička found exceedingly rich and valuable materials from Siberia, all of which he was allowed to utilize freely.

The examinations in Leningrad were carried on in the new Anthropological Institute and Museum, which has a very large and valuable collection of human crania and skeletons, including important series of skulls of the Chukchi and other Siberian peoples. In the Anthropological Institute of the Moscow University there is another huge cranial and skeletal collection, including other important series of Siberian materials. Finally, at the Irkutsk Museum there is a large and very important collection of neolithic skeletal remains from the Angara River and Baikal Lake regions.

The Siberian crania examined and measured included large and particularly interesting series of the Chukchi, Ostiaks, Tungus, and the neolithics of the Irkutsk region. Dr. Hrdlička had the further privilege, partly at Leningrad and partly at Moscow, of seeing the skull, remains of bones, and associated cultural materials of a Neanderthal child from Uzbekistan, in central Asia. This is a find of outstanding anthropological importance, and the skull, lower jaw, and teeth are in excellent condition.

To determine, first, the extent of Puebloan influence in western Kansas and, second, the prospects for injecting time perspective into the earlier archeological history of the region, Dr. Waldo R. Wedel, assistant curator of archeology, extended into the high plains an archeological survey begun in Kansas in 1937. A month was spent in and near Scott County State Park. Traces of a seven-room pueblo ruin opened by Williston and Martin in 1898 were relocated. Middens

yielded potsherds and artifacts of stone, bone, and horn, as well as rare objects of copper, iron, and glass. Charred maize and squash gourd rinds indicate horticulture, but quantities of animal bones suggest that subsistence was primarily by hunting. Contrary to expectations, Puebloan influences were almost negligible. Aside from the stone-walled ruin and nearby prewhite irrigation ditches, there was a bare handful of sherds, some painted, and a few incised clay pipe fragments presumably attributable to late Southwestern stimulus. Numerous bell-shaped roasting pits and large irregular trash pits, as also the great bulk of artifacts recovered, show close relationship to sites of the prehistoric Dismal River culture of southwestern Nebraska. No houses of indigenous type were found. Whatever the relationship between these remains and the Pueblo structure, it is an interesting historical fact that in early contact times the western plains were inhabited by Apache and Comanche bands, some of whom appear to have followed a semihorticultural mode of life.

Just outside the north entrance to the Park a small burial ground, probably much older than the above, yielded two long-headed skeletons and several secondary interments. With the skeletons were broken tortoise shells, tubular bone beads, and chipped flints, including one heavy-stemmed arrowpoint of woodland type. Persistent search failed to disclose any evidence of an associated village or camp site.

About 20 miles east, on Salt Creek in Lane County., Kans., remains of a different type were found. On and just below the surface of one site were materials attributable to the Upper Republican culture of southern Nebraska. Two small pit houses, each with four center posts, were worked out. Along with shallow middens nearby, they yielded typical pottery, arrowpoints, a bone fishhook, and other materials, but no direct proof of horticulture. Separated from this deposit by a barren stratum up to a foot thick was a second cultural layer. From this came thick cord-roughened sherds and large-stemmed arrowpoints markedly unlike the top-layer materials. This second horizon, evidently linked with some plains woodland manifestation, had been intruded by both pit houses. Lack of time precluded investigation of what may be a third cultural horizon underlying both of the above.

These researches seem to show that in Lane and Scott Counties there were at least two groups of prehistoric pottery-making peoples. On stratigraphic grounds, those bearing a woodland culture preceded others with Upper Republican affiliations; neither appears to have been in contact with southwestern peoples. Still later, in protohistoric times, a third complex, assignable to the Dismal River culture, occupied the area. This sequence parallels that in western

Nebraska and adds materially to the geographic range of the cultures involved.

Dr. T. Dale Stewart, associate curator of physical anthropology, continued systematic excavations at the site of the Indian village located in Stafford County, Va., visited by Capt. John Smith in the summer of 1608 and described by him under the name of Patawomeke. Indications were that it had been a stockaded village. Among the details of the town plan that remained undiscovered at the close of the 1938 season were the main entrances, the location of the dwellings, and the manner of their construction. The cultural objects obtained during this work, as well as those found previously by Judge Graham, showed considerable uniformity, and thereby suggested a relatively short occupancy of the site. Nothing thus far gave indication of the presence here of cultural elements differing from those apparent on the surface. Nevertheless, a further development of the town plan in itself was deemed of sufficient importance for continuing the investigation in 1939. Constant presence at the site permitted the employment of a somewhat different technique from that used last year. Trenches 10 feet broad were extended across undisturbed parts of the site. This increased exposure, in contrast to the previous short 5-foot trenches, clarified the picture considerably. The initial trenches were run in the field to the east that had been under cultivation last season. Here it was hoped to find an entrance to the stockade, but none was found. As elsewhere about the site, the post holes are so numerous, presumably as a result of replacements and relocations, that the details are obscured. Some time was devoted also to trenching the accumulated refuse along the bluff overlooking the creek. In places these deposits reach 4 feet in depth, but give evidence of having received accretions from the plow.

Attention was distracted from these features toward the close of the season by two important finds of a different nature, a deep pit, containing a type of pottery unlike that prevailing on the surface, and an ossuary. The finding of the ossuary offered the opportunity to expose the bones from above in order to show their arrangement. Circumstances usually do not allow time for this procedure. In the present case a good record was made of about one-third of the burial pit before heavy and prolonged rains interrupted. A typical method of contracting the body appears to have been that in which the lower legs were flexed forward unnaturally at the knees so that the feet came to touch the abdomen. Two other features of the ossuary are of interest: At one place there was a mass of charred bones, the remains perhaps of a deliberate cremation or sacrifice. In connection with some of the skeletons there were great numbers of shell beads, and in one of these cases the largest beads had been placed within the skull, obviously at the time of burial.

Biology.—Field work in the study of the distribution and collection of birds and mammals of North Carolina, begun in the spring of 1939 and continued until July, was opened again in the fall for a period of a little over 2 months with W. M. Perrygo in charge of the party and Charles L. Wheeler as assistant. Dr. Wetmore and Mr. Graf visited the party when the men were located near Mattamuskeet in October, and spent several days with them. The work was concluded toward the close of November, with important collections as the result. In the spring of 1940 Mr. Perrygo was dispatched for similar work in the field in South Carolina, Southgate Hoyt serving as assistant throughout the period, with John Calhoun also as a member of the party during the early part of the summer. All this work was carried on under the W. L. Abbott fund.

In continuation of work in the vicinity of the archeological camp at Tres Zapotes, Veracruz, begun last year by Dr. Wetmore, M. A. Carriker, Jr., was engaged in making collections of birds in this area from January to May. The resulting collections, together with those that were obtained by Dr. Wetmore, constitute the most valuable series of birds yet assembled from this interesting area. Mr. Carriker during this season made collections in the region of the Tuxtla Mountains, which have been proposed for a national park, and also supplemented his series from Tres Zapotes with material from Tlacotalpan and from the coastal region south of Alvarado. The investigations were carried on under the W. L. Abbott fund.

Dr. Hobart M. Smith, traveling under the Walter Rathbone Bacon traveling scholarship of the Smithsonian Institution, continued throughout the year an exploration and study of the herpetological fauna of Mexico, covering systematically that interesting region. As a result of his work many beautifully prepared reptiles and amphibians have been received at the Museum. Dr. Smith was still in the field at the close of the fiscal year.

Dr. Leonard P. Schultz, detailed to accompany the U. S. S. *Bushnell* as naturalist on the Naval expedition to the Phoenix and Samoan Islands during the summer of 1939, returned on August 18 with large collections consisting of about 14,000 fishes, besides mollusks, coelenterates, echinoderms, worms, and other marine invertebrates, reptiles, birds, mammals, and plants aggregating 2,000 or 3,000 specimens.

As in past years, Capt. Robert A. Bartlett in his annual expedition to Greenland waters brought to the Museum further valuable additions to the invertebrate collections besides a noteworthy collection of Arctic plants.

Austin H. Clark continued his work on the survey of the butterfly fauna of Virginia, visiting different localities during the summer of 1939 and the spring of 1940.

Upon invitation of the Venezuelan Government, Mrs. Agnes Chase, custodian of grasses, was detailed to Venezuela in February for the purpose of studying the grasses of that country and recommending plans for agrostological research. Field work was carried out successfully in the western, northern, and eastern parts of the country during a stay of 6 weeks. Notwithstanding an almost unprecedented drouth, about 1,500 specimens were collected. Continuing his study of the flora of Big Pine Key, Fla., E. P. Killip, associate curator of the National Herbarium, accompanied by Robert F. Martin, of the Department of Agriculture, spent a period of 2 weeks there in midwinter. To the 208 species of plants discovered on three earlier visits, 32 were added, and many duplicates were collected for general distribution.

Geology.—Dr. W. F. Foshag, curator of physical and chemical geology, spent August 1939 collecting minerals in Mexico, confining his studies largely to the states of Nuevo Leon and Durango. Mapimi and Cerro Mercado, in the state of Durango, yielded exceptionally fine material, notably the rare arsenates of iron from upper workings of the Ojuela mine recently reopened by Mexican miners, and fine apatite crystals and associated minerals from Cerro Mercado. Among other localities visited were Banderas, Cabrellas, Higueras, Diente, Zimapan,, Guanajuato, and Queretaro. After the Instituto Geologico de Mexico had deducted its selection, eight cases were shipped to Washington.

Late in September, Dr. G. A. Cooper, assistant curator of stratigraphic paleontology, joined Dr. Josiah Bridge, of the United States Geological Survey, in Salt Lake City, Utah, whence they journeyed to Logan, where Dr. J. S. Williams, of Utah State Agricultural College, assisted them in the study of that region. The classic area for Cambrian, Lower Ordovician, and Devonian fossils, near Eureka, Nev., was visited, and 12 days were spent with Dr. T. S. Nolan and party, of the United States Geological Survey. Next, Las Vegas, Nev., furnished Lower Ordovician collections for future studies of that little-known area. The Devonian rocks at Silver City, N. Mex., were next examined and excellent fossils collected. From here the party proceeded to El Paso and Van Horn, Tex., obtaining Lower Ordovician fossils from the El Paso limestone; then to Marathon and the Glass Mountains, where 5 days were devoted to collecting silicified Permian fossils. The Central Hill country of Texas was visited for Cambrian fossils, and Mineral Wells for deposits of Pennsylvanian age. Turning homeward by way of the Arbuckle Mountains and Criner Hills, Okla., they devoted a week to collecting Middle Ordovician fossils. Dr. Cooper continued to Lower Ordovician outcrops in south-central Missouri and the Silurian of Little Saline Valley in east-central Missouri.

The season's work was brought to a close with collecting in the Wabash region of Indiana, where Silurian fossils were obtained from reefy masses near Peru, and in southern Indiana from Devonian and Mississippian rocks. Although the purpose of this long trip was to build up the weak parts of the study series of invertebrate fossils, equally important was the information obtained for definite placement stratigraphically of the Museum sets of fossils obtained in the days when such correlation was not so accurate. The Lower Ordovician fossils from Nevada and Texas, Permian of Texas, Pennsylvanian of central Texas, and Silurian from east-central Missouri and north-central Indiana, resulting from this trip, were all new to the collections.

Dr. E. O. Ulrich, associate in paleontology, in order to further his stratigraphic studies of Appalachian Valley geology and to test certain conclusions before publication, spent the month of September in field work in the southern section of the area, and a shorter time in June in Pennsylvania. Good collections were made, but most important was the information obtained to place stratigraphically the Museum's older sets of fossils.

In the division of vertebrate paleontology, C. W. Gilmore was detailed early in the spring of 1940 to accompany Earl Trager, of the National Park Service, on a reconnaissance trip to the site of a proposed national park in the Big Bend region of Texas. Although no collections were made, the area was determined as a field of much promise for dinosaur remains. The main field operations of the year for this division were conducted by Dr. C. Lewis Gazin, assistant curator, who left Washington early in June 1939 to head an expedition into the Upper Cretaceous and Paleocene regions of Utah, a continuation in part of two previous seasons of field work. In the upper Cretaceous along the westerly slope of North Horn Mountain, several partially articulated lizard skeletons and two incomplete ceratopsian skulls were among the specimens collected. In the Paleocene numerous fragmentary mammal specimens, consisting chiefly of jaw fragments and teeth, were obtained. As many of the latter represented new forms of multituberculates, taeniodonts, and other primitive forms, this collection contributes much information to the fauna of the Dragon formation.

Early in June 1940 Dr. Gazin left to continue the work in the Paleocene of Utah in the vicinity of North Horn Mountain and then to the Eocene of the Bridger Basin of Wyoming.

MISCELLANEOUS

Visitors.—A total of 2,505,171 visitors at the various Museum buildings was recorded for the year. This is 271,826 more than the number for the previous year and represents an all-time record

for annual attendance. This year the high months were July and August 1939, when 360,599 and 400,719 visitors, respectively, were recorded. The attendance in the four Museum buildings was as follows: Smithsonian Building (closed to visitors from January 2 to June 30, 1940), 200,113; Arts and Industries Building, 1,261,808; Natural History Building, 809,661; Aircraft Building, 233,589.

Publications and printing.—The sum of $27,100 was available during 1940 for the publication of the Museum Annual Report, Bulletins, and Proceedings. Thirty publications were issued—the Annual Report, 1 Bulletin, 1 Contributions from the United States National Herbarium, and 27 separate Proceedings papers. Particularly outstanding were the following: Variations and Relationships in the Snakes of the Genus *Pituophis*, by Olive Griffith Stull (Bull. 175); The Hederelloïdea, a Suborder of Paleozoic Cyclostomatous Bryozoa, by Ray S. Bassler; Observations on the Birds of Northern Venezuela and Notes on the Birds of Kentucky, by Alexander Wetmore; Catalog of Human Crania in the United States National Museum Collections: Indians of the Gulf States, by Aleš Hrdlička; Trematodes From Fishes Mainly From the Woods Hole Region, Massachusetts, by Edwin Linton; and A Prehistoric Roulette from Wyandotte County, Kansas, by Waldo R. Wedel and Harry M. Trowbridge.

Volumes and separates distributed during the year to libraries, institutions, and individuals throughout the world aggregated 65,962 copies.

W. P. A. assistance.—As in previous years workers were assigned from the Works Progress Administration of the District of Columbia to assist the Museum staff in miscellaneous activities. On July 1, 1939, 144 assistants were so engaged, and on April 15, 1940, when the project was terminated owing to shortage of funds, these workers numbered 126. The service performed totaled 169,848 man-hours for the year. Conclusion of the project was felt in all departments of the Museum. Aside from the care given by the W. P. A. help in arranging and preserving the study collections, the cataloging and numbering of specimens were of direct aid to research, for the material thus handled became readily available for study by our own staff and by other technical workers.

Special exhibits.—Twelve special exhibits were held during the year under the auspices of various educational, scientific, and Government agencies. In addition the department of engineering and industries arranged 23 special displays—2 in engineering, 9 in graphic arts, and 12 in photography.

Participation in scientific congress.—Members of the Museum staff actively participated in the Eighth American Scientific Congress,

which was held in Washington May 10 to 21, 1940, under the auspices of the United States Government and which brought together distinguished scientists from all the Pan American Republics. Dr. Alexander Wetmore served as the Secretary General to the Congress, working with officials of the State Department. Dr. C. G. Abbot and Dr. T. Wayland Vaughan were members of the organizing committee, and the latter was chairman of the geological section. All Museum curators were designated official delegates, and two members of the Museum staff—Frank M. Setzler and Paul H. Oehser—were detailed as secretaries; Austin H. Clark served as science press-relations officer. Dr. Aleš Hrdlička was a member of the section committee on anthropology. At various technical sessions of the Congress papers were presented by the following Museum scientists: Dr. Aleš Hrdlička, Dr. T. Dale Stewart, Dr. Remington Kellogg, Dr. Waldo L. Schmitt, and Dr. Paul Bartsch.

CHANGES IN ORGANIZATION AND STAFF

In the Department of Anthropology, Andreas J. Andrews was promoted October 1, 1939, to chief preparator in anthropology, succeeding W. H. Egberts, who retired.

In the Department of Biology, Herwil M. Bryant was appointed as junior biologist on September 29, 1939, and assigned to duty with the United States Antarctic Service. Through the retirement of Mrs. M. S. Clapp, Miss Vendla M. Hendrickson was promoted June 1, 1940, to clerk-stenographer in the Head Curator's office. Other changes in this Department included the promotion of Herbert G. Deignan to assistant curator in the Division of Birds on June 16, 1940, of Mrs. Aime M. Awl to principal scientific illustrator on June 1, 1940, and of Charles S. East to scientific aid on March 1, 1940.

In the library, Miss Marie Ruth Wenger was promoted to library assistant, on November 16, 1939.

Two honorary appointments on the Museum staff were made during the year, as follows: Dr. Stuart H. Perry as associate in mineralogy, and Dr. Adam G. Böving as associate in zoology.

Under the superintendent of buildings and labor Harry S. Jones was raised to principal mechanic (foreman of electricians), on September 1, 1939, and Sherley F. Williams to senior mechanic (senior electrician) on October 1, 1939. George W. Sharman was promoted to senior mechanic (senior sheet-metal worker), on September 16, 1939.

Floyd B. Kestner of the photographic laboratory was made assistant photographer on November 16, 1939.

Eleven employees left the service through the operation of the retirement act. Seven of these for age, as follows: Leonard C. Gunnell, assistant librarian, on May 31, 1940, with 33 years 11 months of serv-

ice; William H. Egberts, chief preparator, on September 30, 1939, with 25 years 1 month of service; Mrs. Mary S. Clapp, clerk-stenographer, on May 31, 1940, with 19 years 11 months of service; Frank J. Cross, senior mechanic (tinner), on August 31, 1939, with 19 years 9 months of service; James F. Cudmore, lieutenant of guard, on June 30, 1940, with 21 years 3 months of service; William J. Snellings, guard, on December 31, 1939, with 18 years 5 months of service; and Willis Lanier, laborer-messenger, on August 31, 1939, with 24 years 7 months of service. Lewis E. Perry, shipper, on June 30, 1940, retired at his own request with 25 years 3 months of service. Three persons were retired for disability: Micajah W. Knight, guard, on November 30, 1939; William J. Myers, guard, on October 10, 1939; and Alberta Jackson, attendant, on August 31, 1939.

Dr. Willard W. Hill, assistant curator, Division of Ethnology, resigned to enter other service on January 18, 1940.

The year was marked by the loss of Dr. Cyrus Adler, associate in historic archeology, who died in Philadelphia, Pa., on April 7, 1940. Dr. Adler had been associated with the Smithsonian Institution over 50 years. Dr. Maynard M. Metcalf, since March 12, 1925, a collaborator in the Division of Marine Invertebrates, died on April 19, 1940.

Respectfully submitted.

ALEXANDER WETMORE, *Assistant Secretary.*

Dr. CHARLES G. ABBOT,
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 of the National Gallery of Art, the third annual report of the Board covering its operations for the fiscal year ended June 30, 1940. Such report is being made pursuant to the provisions of the act of March 24, 1937 (50 Stat. 51), as amended by the public resolution of April 13, 1939 (Pub. Res. No. 9, 76th Cong.).

Under the act of March 24, 1937, Congress created, in the Smithsonian Institution, a bureau to be directed by a board to be known as the "Trustees of the National Gallery of Art," charged with the maintenance and administration of the National Gallery of Art.

In addition, Congress appropriated to the Smithsonian Institution the area bounded by Seventh Street, Constitution Avenue, Fourth Street, and North Mall Drive (now Madison Drive) Northwest, in the District of Columbia, as a site for a National Gallery of Art and authorized the Smithsonian Institution to permit The A. W. Mellon Educational and Charitable Trust, a public charitable trust, established by the late Hon. Andrew W. Mellon, of Pittsburgh, Pa., to construct thereon a building to be designated the "National Gallery of Art." Further, the act authorizes the Board to accept, for the Smithsonian Institution, and to hold and administer gifts, bequests and devises of money, securities, or other property for the benefit of the National Gallery of Art. To date two great collections of outstanding works of art have been received by the Trustees of the Gallery; namely, the Mellon Collection and the Samuel H. Kress Collection, which will be housed and exhibited in the Gallery building now being constructed in Washington. Under the creating act, the United States is pledged to provide such funds as may be necessary for the upkeep of the National Gallery of Art and the administrative expenses and costs of operation thereof, including the protection and care of the works of art so that the Gallery shall at all times be properly maintained and the works of art exhibited regularly to the general public.

ORGANIZATION AND STAFF

The statutory members of the Board 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, and five

general trustees. The general trustees, serving during the fiscal year ended June 30, 1940, were David K. E. Bruce, Duncan Phillips, Ferdinand Lammot Belin, Joseph E. Widener, and Samuel H. Kress.

At the annual meeting of the Board held February 12, 1940, David K. E. Bruce was elected President and Ferdinand Lammot Belin was elected Vice President of the Board to serve for the ensuing year. Other executive officers continuing in office were Donald D. Shepard, Secretary-Treasurer and General Counsel, David E. Finley, Director, Harry A. McBride, Administrator, and John Walker, Chief Curator. At the same meeting the Board elected Macgill James of Baltimore, Maryland, to be Assistant Director. Mr. James has been serving as Director of the Municipal Museum of the City of Baltimore and is well qualified by experience and training to perform the duties of Assistant Director of the National Gallery of Art. Mr. James will begin his Gallery duties in the near future.

Other officers of the Gallery appointed during the year were Charles Seymour, Jr., formerly Instructor of History of Art and History in the Department of Fine Arts at Yale University, as Curator of Sculpture; George T. Heckert, as Assistant to the Administrator; and Sterling P. Eagleton, as Chief Engineer and Building Superintendent.

The three standing committees of the Board, provided for in the bylaws, as constituted at the annual meeting of the Board held February 12, 1940, are:

EXECUTIVE COMMITTEE

Chief Justice of the United States, Charles Evans Hughes.
Secretary of the Smithsonian Institution, Dr. C. G. Abbot.
David K. E. Bruce.
Ferdinand Lammot Belin.
Duncan Phillips.

FINANCE COMMITTEE

The Secretary of the Treasury, Henry Morgenthau, Jr.
The Secretary of State, Cordell Hull.
David K. E. Bruce.
Ferdinand Lammot Belin.
Samuel H. Kress.

ACQUISITIONS COMMITTEE

David K. E. Bruce.
Duncan Phillips.
Joseph E. Widener.
Ferdinand Lammot Belin.
David E. Finley.

During the year satisfactory progress has been made in the work of organizing the Gallery staff. All the positions required with few exceptions have now been classified by the Civil Service Commission, and examinations for several positions in the artistic

and professional field have been held by the Commission. The nuclear staff has been slightly increased so that it will be in a position to employ and train the staff which will be required when the building is completed and taken over by the Government. Twelve persons were employed on the Government roll as of June 30, 1940. This staff has been engaged in preparatory work and the compilation of the catalogs for the Gallery, and in the purchase of supplies and furniture to be placed in the Gallery building when completed, and in other matters looking toward the opening of the Gallery to the public. Until the Gallery is completed, the staff is being housed in offices furnished by The A. W. Mellon Educational and Charitable Trust.

A large part of the equipment, supplies, furniture, and furnishings have been purchased for delivery as soon as the building is completed. Favorable progress has been made upon the complete cataloging of the works of art in the national collections which will be housed in the Gallery building.

APPROPRIATIONS

For salaries and expenses, for the upkeep and operation of the National Gallery of Art, the protection and care of the works of art therein, and all administrative expenses incident thereto, as authorized by the act of March 24, 1937 (50 Stat. 51), as amended by the public resolution of April 13, 1939 (Pub. Res. No. 9, 76th Cong.), there was appropriated for the fiscal year 1941 the sum of $300,000. Of the sum of $159,000 appropriated by Congress for the period July 1, 1939, to June 30, 1940 (53 Stat. 984), $158,985.75 was expended or encumbered, in the following detailed amounts, for personal services, printing and binding, and supplies and equipment, leaving an unencumbered appropriation of $14.25.

Expenditures and encumbrances

Personal services	$21,284.63
Printing and binding	1,901.47
Supplies and equipment	135,799.65
Total	158,985.75

ACQUISITIONS

On February 12, 1940, the Board of Trustees accepted, from The A. W. Mellon Educational and Charitable Trust, a valuable gift of 11 celebrated paintings by early American artists which are considered outstanding not only for their aesthetic but also their historical merit. These paintings will be placed in specially designed rooms when the building is completed. This gift marks the first step toward setting up

in the National Gallery a section devoted to the advancement and preservation of American art. The gift includes the noted painting of the family of George Washington by Edward Savage. Other paintings given are as follows:

Painting	*Artist*
John Randolph	Gilbert Stuart.
Mrs. Richard Yates	Do.
Lawrence Yates	Do.
George Washington	Do.
Joseph Coolidge	Do.
Alexander Hamilton	John Trumbull.
William Vans Murray	Mather Brown.
Richard Earl Howe	John Copley.
Colonel Guy Johnson	Benjamin West.
John Randolph	Chester Harding.
A Young Man in a Large Hat	Frans Hals.
A Turk	Rembrandt.
Portrait of a Flemish Lady	Van Dyck.

At the same meeting the Board also accepted from Mr. Mellon's charitable trust two fountain groups by Pierre Legros and Jean Baptiste Tubi. These groups were executed in 1672 on orders of Louis XIV as a part of the decoration for the celebrated Theatre d'Eau at Versailles and are exceedingly valuable not only for their antiquity but for the quality of art they reflect. They are admirably suited for the settings arranged for them. One will be placed in each of the spacious garden courts which form an important architectural feature of the main floor of the Gallery.

During the year other offers of gifts of works of art were received but were not accepted because, in the opinion of the Board, they were not considered desirable acquisitions for the permanent collection of the Gallery as contemplated by section 5 (b) of the act of March 24, 1937.

EXCHANGE OF WORKS OF ART

On June 17, 1940, the duly authorized officers of the Gallery, as directed by the Board, on recommendations of the acquisitions committee, exchanged a terra-cotta bust representing Giovanna Tornabuoni and attributed to Verrocchio, in the Mellon collection, for the painting by Aelbert Cuyp entitled "The Maas at Dordrecht" and two monumental eighteenth century marble vases by Clodion (Claude Michel), all to be included in the permanent collection as more desirable and needed acquisitions for the Gallery. The two marble vases by Clodion are signed and dated 1782 and are said to have been made for the Palace of Versailles during the reign of Louis XVI. The painting by Cuyp is said by experts to be one of the greatest masterpieces of the work of that master of the Dutch school of the seventeenth century. The exchange had the approval of the donor.

RESTORATION AND REPAIRS TO WORKS OF ART

During the year, as authorized by the Board, Stephen Pichetto, Consultant Restorer to the Gallery, has undertaken such work of repair and restoration of paintings as has been found to be necessary, at his studio in New York. Such paintings when completed have been returned in excellent condition. Other necessary repairs and restoration to works of art in the collections will be done by Mr. Pichetto during the fiscal year ending June 30, 1941.

PAINTINGS LOANED AND RETURNED

During the year the following paintings from the Mellon collection were returned from the Masterpieces of Art Exhibition at the New York World's Fair where they had been on loan for the period April 30 to October 31, 1939, as reported by the Board of Trustees last year:

Painting	Artist
Self-Portrait	Rembrandt.
An Old Woman Seated	Hals.
A Gentleman Greeting a Lady	Terborch.

Also, the following paintings from the Mellon collection were returned from the Golden Gate International Exposition at San Francisco where they had been on loan for the period February 16 to December 31, 1939, as reported by the Board of Trustees last year:

Painting	Artist
A Young Man at Table	Rembrandt.
Portrait of Balthasar Coymans	Hals.
A Dutch Courtyard	Pieter de Hooch.

CURATORIAL WORK

Curatorial work during the year consisted primarily of studying and cataloging the large Mellon and Samuel H. Kress collections and in making recommendations for the installation of these collections in the Gallery building when it is completed.

PUBLICATIONS FUND

In its meeting of February 12, 1940, the Board adopted a resolution approving a plan for a publications fund. Carrying this plan into effect, a sum was advanced by The A. W. Mellon Educational and Charitable Trust to establish the Publications Fund, the purpose of which is to ensure that catalogs, handbooks, color reproductions, postcards, and similar material, of the highest quality but at moderate cost, shall be available to the public for educational and study purposes when the Gallery is opened. Considerable progress has already been made in the preparation of these publications.

GALLERY CONSTRUCTION

Work on the Gallery building and landscaping on the site was started in the summer of 1937 and is rapidly nearing completion. It is hoped that construction will be completed in November of this year. Several months will be required for decorating the exhibition rooms and installing the collection. Formal opening of the Gallery to the public, therefore may take place in March. As of June 30, 1940, $11,271,786.63 had been expended by The A. W. Mellon Educational and Charitable Trust for the construction of the building and landscaping of the site. It is estimated that the total construction cost of the building and landscaping will exceed $15,000,000. Upon advice of the accountants of the Gallery, recording of such costs on the books of the National Gallery of Art will be deferred until the building is turned over to the Smithsonian Institution and the trustees of the Gallery.

AUDIT OF PRIVATE FUNDS OF THE GALLERY

Price, Waterhouse & Co., a nationally known firm of public accountants, has made an examination of the accounting records maintained for the private funds of the National Gallery of Art and its Publications Fund for the year ended June 30, 1940. The certificate of Price, Waterhouse & Co. follows:

In accordance with instructions, we have made an examination of the accounting records maintained for the private funds of the National Gallery of Art and its Publications Fund for the year ending June 30, 1940, and have obtained information and explanations from its officers and employees. Records relating to the disbursement of public funds appropriated by Congress for the upkeep of the National Gallery of Art or the administrative expenses and cost of operation were not within the scope of our examination.

The recorded assets of the National Gallery of Art at June 30, 1940, comprised works of art donated by The A. W. Mellon Educational and Charitable Trust and by Mr. Samuel H. Kress and the Samuel H. Kress Foundation, or works of art acquired in exchange for donated items. The works of art acquired from The A. W. Mellon Educational and Charitable Trust were valued for accounting purposes at $31,892,502.31, including $589,340 for items acquired during the year under review. One piece of sculpture included in the first-mentioned amount at $185,000 was exchanged during the year for two vases and a painting appraised at values aggregating the same amount. The value for accounting purposes of the works of art donated June 29, 1939, by Mr. Samuel H. Kress and the Samuel H. Kress Foundation has not yet been determined. This gift is subject to completion of construction of the Gallery building on or before June 29, 1941, as provided in the gift indenture. The cost of construction of the building is being met by The A. W. Mellon Educational and Charitable Trust and the recording of the expenditures on the books of the National Gallery of Art is deferred until completion of the building.

The Publications Fund, National Gallery of Art was created by an indenture dated February 28, 1940 between The A. W. Mellon Educational and Charitable

Trust and three of the officers of the National Gallery of Art designated as "Custodians." The Fund was established for the purpose of making available to the public, at reasonable cost, catalogues and other publications concerning the works of art. The Trust advanced to the Custodians the sum of $40,000, and the indenture provides for repayment after July 1, 1941, out of profits, if any, from sale of publications and for transfer of any remaining assets of the Fund to the National Gallery of Art after the advance has been entirely paid. We obtained a confirmation from the National Metropolitan Bank of the amount of $40,000 on deposit at June 30, 1940.

Our examination disclosed no other transactions to June 30, 1940, which should be recorded in the books of account. We did not inspect the works of art but we examined the deeds of trust which provide that the donors shall be responsible for the custody and shall bear the cost of storage and insurance until the delivery of the works of art after completion of the Gallery building.

In our opinion, subject to the fact that the value of the works of art acquired June 29, 1939, has not been determined and recorded, the books of account fairly reflect the transactions pertaining to the private funds of the National Gallery of Art and of the Publications Fund, National Gallery of Art, at June 30, 1940, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Respectfully submitted.

F. L. Belin, *Vice President.*

Dr. C. G. Abbot,
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, 1940:

The beginning of the year found the Gallery in the throes of major repairs which continued for several months after the first of July. The galleries were reopened to the public October 4, 1939. A new background of rubber-backed monk's cloth was used, with all trimmings, baseboards, railings, and reflectors painted to match. This produces such a soft, quiet effect that all attention is centered on the exhibits themselves. The pictures were all put in first-class condition and backed.

Five special exhibits were held in the foyer, and two, of miniatures, in the Gallery proper. The Smithsonian Building, where Graphic Arts exhibits have usually been held, was closed to the public on account of alterations, so that the nine such exhibits held during the year were transferred to the north lobby of the Natural History Building and were displayed in National Collection of Fine Arts cases.

Three miniatures were purchased and two others were received as loans. Loans of large objects or paintings cannot be accepted because of crowded conditions in the galleries and in storage.

APPROPRIATIONS

For the administration of the National Collection of Fine Arts by the Smithsonian Institution, including compensation of necessary employees, purchase of books of reference and periodicals, traveling expenses, uniforms for guards, and necessary incidental expenses, $33,765 was appropriated, of which $11,999.89 was expended for the care and maintenance of the Freer Gallery of Art, a unit of the National Collection of Fine Arts. The balance of $21,765.11 was spent for the care and upkeep of the National Collection of Fine Arts, nearly all of this sum being required for the payment of salaries, traveling expenses, books, periodicals, and necessary disbursements for the care of the collection.

THE SMITHSONIAN ART COMMISSION

The nineteenth annual meeting of the Smithsonian Art Commission was held on December 5, 1939. The members met at 10:30 in the Natural History Building, where, as the advisory committee on the acceptance of works of art which had been submitted during the year, they accepted the following:

Oil painting "Young Girl with Dog," by Edward Percy Moran, 1890 (1862–1925). Bequest of Alfred Duane Pell.

Mr. McClellan and Mr. Lodge were appointed to select objects from the 207 ceramics, 106 ivory carvings, 30 fans, 5 pieces of silver, 3 tapestries, and 3 chairs, received from the bequest of Alfred Duane Pell, which they considered suitable for the National Collection of Fine Arts.

After a brief visit to the Freer Gallery of Art, the members proceeded to the regent's room in the Smithsonian Building for the further proceedings, the meeting being called to order by the chairman, Mr. Borie.

The members present were: Charles L. Borie, Jr., chairman; Frank Jewett Mather, Jr., vice chairman; Dr. Charles G. Abbot (ex officio), secretary; and Louis Ayres, David E. Finley, John E. Lodge, Paul Manship, George B. McClellan, Edward W. Redfield, and Mahonri M. Young. Ruel P. Tolman, Curator of the Division of Graphic Arts in the United States National Museum and Acting Director of the National Collection of Fine Arts, was also present.

The Commission recommended to the Board of Regents the reelection of Louis Ayres, James E. Fraser, George H. Edgell, and Frank Jewett Mather, Jr.

The following officers were reelected for the ensuing year: Charles L. Borie, Jr., chairman; Frank Jewett Mather, Jr., vice chairman, and Dr. Charles G. Abbot, secretary.

The following were reelected members of the executive committee for the ensuing year: George B. McClellan (chairman), Herbert Adams, and Gilmore D. Clarke. Charles L. Borie, Jr., as chairman of the Commission, and Dr. Charles G. Abbot, as secretary of the Commission, are ex-officio members of the executive committee.

Dr. Abbot reported in detail regarding various phases of the act providing for the Smithsonian Gallery of Art; of the rules under which the recent competition for a design for the Gallery had been carried out; of the results of the competition; and of the suitability of the prize-winning design. After a very full discussion by the Commission, during which Dr. Abbot stated that he would be glad to submit to the forthcoming meeting of the Board of Regents any

expression of opinion which the Commission might agree upon, Mr. Mather submitted the following resolution which the members present, on motion, adopted as their opinion in the matter:

The primary purpose of the Smithsonian Gallery of Art is worthily to house, classify, and exhibit such art collections as the Smithsonian Institution now has or shall have. The secondary purpose is to make an educational use of such art collections through direct instruction at Washington or through loan exhibitions in the United States or elsewhere.

THE CATHERINE WALDEN MYER FUND

Three miniatures were acquired from the fund established through the bequest of the late Catherine Walden Myer, as follows:

19. "Portrait of I. G.," by an unknown artist; from John Schwarz, Baltimore, Md.

20. "Portrait of a Colonial Gentleman," signed Copley, 1773; from Whitlock's Incorporated, New Haven, Conn.

21. "Portrait of a Man," by an unknown artist; from Michael J. de Sherbinin, Mount Vernon, N. Y.

LOANS ACCEPTED

A miniature of Mrs. Robert Means, by Edward Greene Malbone (1777–1807) was lent by J. J. Pringle, Jr., Alexandria, Va.

A miniature of Ebenezer Martin (1791–1876) by an unknown artist, was lent by Miss Alice L. Wood, Blowing Rock, N. C.

A portrait of Mr. Justice Brandeis, by Joseph Tepper, was lent by the friends of Mr. Justice Brandeis, through Paul A. Freund, Harvard University, Cambridge, Mass.

Three paintings—"Portrait of Woman in White" by Haggenaes, "Linlithgan Bridge" by Macaulay Stevenson, and "Landscape—Moonlight," by E. R. Menard—were lent by Miss A. M. Hegeman, Washington, D. C.

LOANS TO OTHER MUSEUMS AND ORGANIZATIONS

An oil painting, "Brittany Sunday," by Eugene Vail, was lent to the Corcoran Gallery of Art for a memorial exhibition from January 6 to 28, 1940. (Returned February 1, 1940.)

Two oil paintings, "Portrait of Stephen Decatur," by Gilbert Stuart, and "Portrait of Admiral Sims," by Irving R. Wiles, were lent to the United States Naval Academy for an exhibition of Masterpieces of Painting and Graphic Arts relating to Naval Personages and Traditions from April 6 to May 15, 1940. (Returned May 20, 1940.)

The following four paintings were lent in April 1940 to The Public Library of the District of Columbia:

"Portrait of Thomas McKean" by Charles Willson Peale, and "Portrait of Mary Abigail Willing Coale" by Thomas Sully, to the Georgetown Branch.

"Madonna with Halo of Stars" by an unknown artist, to the Southeastern Branch.

"Musa Regina" by Henry Oliver Walker, to the Northeastern Branch.

An oil painting, "Portrait of Mary Hopkinson (wife of Dr. John Morgan)," by Benjamin West, was lent May 20, 1940 to the Masterpieces of Art exhibition at the New York World's Fair, 1940.

Two oil paintings, "The Torrent" and "Fishing Boats at Gloucester," by John Twachtman, were lent to the Munson-Williams-Proctor Institute, Utica, N. Y., for an exhibition of the work of John Twachtman from November 5 to 28, 1939. (Returned December 1, 1939.)

An oil painting, "Moonlight," by Albert P. Ryder, was lent to M. Knoedler & Co., New York City, for an exhibition of paintings by Albert P. Ryder and Robert L. Newman called "Two American Romantics" from November 13 to December 2, 1939. (Returned December 6, 1939.)

Two oil paintings, "Caresse Enfantine," by Mary Cassatt, and "Sunset, Navarro Ridge, California Coast," by Ralph A. Blakelock, were lent to the Art Institute of Chicago for an exhibition, "Half a Century of American Art (1888–1939)," from November 16, 1939, to January 7, 1940. The Blakelock painting was forwarded to Chicago at the close of the Golden Gate International Exposition, San Francisco, Calif. (Returned January 10, 1940.)

LOANS RETURNED

The painting "Friendly Neighbors," by Alfred C. Howland, lent to Harvard University, William Hayes Fogg Art Museum, Cambridge, Mass., for an exhibition of New England genre by New England artists, was returned September 8, 1939.

THE NATIONAL COLLECTION OF FINE ARTS REFERENCE LIBRARY

A total of 471 publications, including 334 acquired by purchase and 2 by transfer, were accessioned during the year.

OTHER ACTIVITIES

The Acting Director visited and studied collections and methods of installation in New England galleries from August 21 to September 1, 1939.

Four colored lantern slides were lent to Holbrook Muller for use in connection with a lecture given at the Washington Heights Presbyterian Church, December 26, 1939.

SPECIAL EXHIBITIONS

The following exhibitions were held:

November 9 to 29, 1939.—The Fifth Annual Metropolitan State Art Contest, 1939, under the auspices of the Department of Fine Arts of the District of Columbia Federation of Women's Clubs. There were 272 exhibits, paintings, sculpture, and prints, by 128 artists.

December 12, 1939, to January 1, 1940.—Special exhibition of 29 pastel and oil paintings by Esteban Valderrama, under the patronage of His Excellency the Ambassador of Cuba, Señor Dr. Pedro Martinez Fraga.

December 15, 1939, to February 8, 1940.—Special exhibition of a miniature by Juan de Dios Hoyos, under the patronage of His Excellency the Ambassador of Mexico, Señor Dr. Francisco Castillo Najera.

January 9 to 25, 1940.—Special exhibition of 83 pieces of wood turnings by James L. Prestini of Lake Forest, Ill.

January 9 to 31, 1940.—Special exhibition of 24 portraits and 5 drawings by John Slavin, of Richmond, Va.

April 4 to 28, 1940.—Special exhibition of 153 paintings by 31 members of the Landscape Club of Washington, D. C.

May 25 to June 10, 1940.—Special exhibition of 103 miniatures by 61 members of the Pennsylvania Society of Miniature Painters.

PUBLICATIONS

Tolman, R. P. Report on the National Collection of Fine Arts for the year ended June 30, 1939. Appendix 3, Report of the Secretary of the Smithsonian Institution for the year ended June 30, 1939, pp. 47–51.

Lodge, J. E. Report on the Freer Gallery of Art for the year ended June 30, 1939. Appendix 4, Report of the Secretary of the Smithsonian Institution for the year ended June 30, 1939, pp. 52–55.

Respectfully submitted.

R. P. Tolman, *Acting Director.*

Dr. C. G. Abbot,
Secretary, Smithsonian Institution.

APPENDIX 4

REPORT ON THE FREER GALLERY OF ART

SIR: I have the honor to submit the twentieth annual report on the Freer Gallery of Art for the year ended June 30, 1940:

THE COLLECTIONS

Additions to the collections by purchase are as follows:

BAMBOO

39.78–
39.79. Chinese, seventeenth–eighteenth century. By Chang Shih-huang. Two brush-holders with landscape designs, inscriptions and signatures carved in delicate relief. Heights: 0.122 x 0.106 respectively.

BRONZE

39.38. Chinese, Eastern Han dynasty, dated in correspondence with A. D. 174. A mirror. Smooth black patina; decoration and inscription in countersunk relief. Diameter: 0.182.

39.39–
39.40. Chinese, late Shang dynasty, fourteenth–twelfth century B. C. Two ceremonial weapons of the type *kê*, each ornamented on both sides with turquoise inlay. Rough green patina. Lengths: 0.393 and 0.391, respectively.

39.41. Chinese, late Chou dynasty, fifth–third century B. C. A ceremonial vessel of the type *tou*. Granular, bluish green patination; design inlaid with gold. 0.151 x 0.189 over all.

39.52. Chinese, Western Chin dynasty, third century A. D. A mirror. White bronze patinated in black, gray, and green with earthy encrustations. On the back, concentric zones of mythological and legendary subjects in high and countersunk relief. A dedicatory inscription of 43 characters. Diameter: 0.175.

39.53. Chinese, early Chou dynasty or earlier, twelfth century B. C. A ceremonial vessel of the type *kuang*. White bronze with smooth light gray-green patina. Decoration in linear relief. 0.169 x 0.196 over all. (Illustrated.)

40.3. Chinese, late Shang dynasty, fourteenth–twelfth century B. C. A vase of the type *ku*. White bronze with a green and black patina. Decoration in linear relief. Inscription. 0.284 x 0.157 over all.

BRONZE AND JADE

40.10. Chinese, late Shang dynasty, fourteenth–twelfth century B. C. Probably from An-yang. A ceremonial sickle in four parts: three of bronze inlaid with turquoise; one (the blade) of jade decorated in linear relief with notched back and ground edge. 0.345 x 0.175 over all (when assembled with all parts in contact). (Illustrated.)

JADE

39.54. Chinese, middle Chou dynasty, eighth–fifth century B. C. An oblong ornament of reddish color shading to gray-green; somewhat translucent; decoration in linear relief. 0.073 x 0.033 over all.

39.55. Chinese, early Chou dynasty, twelfth–eighth century B. C. A ceremonial "toothed" blade of a yellow-brown color with cloudy mottlings of darker brown. 0.411 x 0.065 over all.

MANUSCRIPT

(See also Painting, 39.49b and 39.50b)

39.43. East Indian, fifteenth century. Part of a Jaina *sūtra:* nine leaves of thin paper between brocade-covered boards. Two miniatures. (See under Painting, 39.43.) 0.074 x 0.253 (average leaf).

39.56. Arabic (Persia), Seljuq period, eleventh–twelfth century. A leaf from a *Qur'ān.* The text is written in slender Kufic script in black ink on a ground filled with palmette scrolls drawn in brown ink; vowel-signs in red, blue, and brown. Gold verse-stops, borders, and marginal ornaments. 0.323 x 0.214.

MARBLE

40.2. Chinese, late Shang dynasty, fourteenth–twelfth century B. C. A terminal ornament in the form of a bird; surface details in linear relief on both sides. 0.121 x 0.070 over all.

METAL WORK

39.44 a–b. Iranian (Persian) late eighteenth century. A dagger and sheath, probably made in Shirāz. Curved, double-edged blade of steel. Hilt and scabbard of iron ornamented with gold inlay; arabesques and inscriptions in relief. Length: 0.372.

39.45. Iranian (Persian) sixteenth century. A pierced steel rectangular plaque, a portion of a frieze, containing two medallions with *naskhī* inscriptions on a ground of tendril scrollwork. 0.077 x 0.269.

39.58. Syro-Egyptian, sixteenth century. A globular brass hand-warmer made in two hemispheres, one fitted with a fire pot hung in gimbals. The surface is pierced with small holes; the decoration engraved and inlaid with silver. Diameter: 0.125.

40.4–40.9. Iranian (Persian) sixteenth–seventeenth century. Six small objects of iron and steel:

40.4–40.5. Two sheet-iron comb-backs with sockets for teeth. The decoration is engraved and inlaid with silver and gold. 0.062 x 0.077 and 0.061 x 0.109, respectively.

40.6. A steel hatchet (or chopper) head with screwpin and nut for shafting. Decoration pierced and engraved. 0.159 x 0.078 over all.

40.7. A steel flint-striker in the form of a bird; the decoration is engraved and inlaid with gold; jewels (one damaged) set in the eyes. 0.087 x 0.050 over all.

40.8. A rectangular steel ornament of interlacing vine-scrolls in delicate pierced work. 0.038 x 0.071 over all.

40.9. A circular steel ornament: pierced work with the *bismallah* in gold on a ground of tendrils; gold border. Diameter: 0.046.

40.10

A RECENT ADDITION TO THE COLLECTION OF THE FREER GALLERY OF ART.

39.53

39.50a

39.48b

SOME RECENT ADDITIONS TO THE COLLECTION OF THE FREER GALLERY OF ART.

PAINTING

39.37. Chinese, Sung dynasty or earlier. Style of Chou Fang. "Ladies playing double-sixes." Color on silk. Title, one other inscription, and 3 seals on the mount. Makimono: 0.307 x 0.480.

39.51. Chinese, Ming dynasty, dated in correspondence with A. D. 1536. By Wên Pi (Chêng-ming, 1470–1567). A landscape. Ink on paper. Inscription and 16 seals on the picture; 2 inscriptions and 2 seals on the mount. Makimono: 0.314 x 2.903.

39.59. Chinese, Yüan dynasty, fourteenth century. By Wang Mêng (died 1385). A landscape. Ink and color on paper. One inscription and 10 seals on the picture; label, 4 inscriptions and 25 seals on the mount. Makimono: 0.245 x 0.972.

39.60. Chinese, Ming dynasty, fifteenth–sixteenth century. By T'ang Yin (1466–1524). Landscape. Ink and color on paper. One inscription and 5 seals on the picture; label, 9 inscriptions and 28 seals on the mount. Makimono: 0.283 x 1.030.

40.1. Chinese, Yüan dynasty, fourteenth century. Attribution to Chao Lin. Tatar horsemen. Ink and gold on paper. Two inscriptions and 7 seals on the picture; label on the mount. Makimono: 1.083 x 0.238.

39.43. Indian, fifteenth century. Two miniatures illustrating part of a Jaina *sūtra* (see also Manuscript, 39.43). Color and metallic lustre on paper: Leaf 1: A deity enthroned; two worshippers. Leaf 3: A deity enthroned; six other figures. 0.074 x 0.058 and 0.073 x 0.058, respectively.

39.46a–39.50b. Indian, Mughal, seventeenth century. Five leaves from a royal album upon which are mounted eight paintings on paper and two pages of Persian calligraphy (*qiṭa'*):

39.46a. School of Shāh Jahān. By Govardhan. An equestrian portrait of the Emperor Shāh Jahān. Color and gold. Signature. 0.268 x 0.181.

39.46b. School of Jahāngīr. By Manṣūr. A bird. Color. Signature. 0.114 x 0.205.

39.47a. School of Jahāngīr. Dated in correspondence with A. D. 1620. Attribution to Farrukh Beg. Shāh Ṭahmāsp in the mountains. Color and gold. Inscription. 0.219 x 0.138.

39.47b. School of Jahāngīr. By Muḥammad. A bird. Color and gold. Inscription. 0.142 x 0.100.

39.48a. School of Jahāngīr. Attribution to Manṣūr. Two deer in a landscape. Color and gold. Inscription. 0.167 x 0.093.

39.48b. School of Jahāngīr. Dated in correspondence with A. D. 1610. The Emperor Humāyūn enthroned, a sword bearer in attendance. Color and gold. Inscription. 0.181 x 0.119. (Illustrated.)

39.49a. School of Shāh Jahān. Dated in correspondence with A. D. 1629. By Hāshim. The Emperor Shāh Jahān standing upon a globe; above, angels in clouds bearing insignia of sovereignty. Color and gold; faint outline drawings on the globe. Signature and inscriptions. 0.251 x 0.158.

39.49b. Persian, sixteenth century. By Mīr 'Alī. An illuminated *qiṭa'*. *Nasṭa'līq* script on blue paper. Signature. 0.171 x 0.092.

39.50a. School of Jahāngīr, *ca.* A. D. 1625. By Hāshim. A portrait of the Khān-Khānān ('Abd-'r-Raḥīm). Color and gold. Signature. 0.149 x 0.082. (Illustrated).

39.50b. Persian, sixteenth century. By Mīr 'Alī. An illuminated *qiṭa'*. *Nasta'liq* script on blue paper. Signature. 0.186 x 0.087.

POTTERY

39.42. Chinese, late Shang dynasty, fourteenth-twelfth century B. C. From An-yang. A jar (mouth chipped and repaired) of soft, white, unglazed clay. The decoration is carved in countersunk relief in two registers. Three pierced knobs of water-buffalo design. 0.332 x 0.305 over all.

39.61–
39.77. Chinese, Ming to Ch'ing dynasties, sixteenth-nineteenth (?) century. I-hsing pottery. Seventeen objects of brown, red, or gray polished, unglazed clay:

39.61. Tea-pot, sixteenth century (?) Attribution to Kung Ch'un.
39.62. Tea-pot, seventeenth century. By Shih Ta-pin.
39.63. Tea-pot, seventeenth century. By Shih Ta-pin.
39.64. Tea-pot, dated in correspondence with A. D. 1620. By Li Chung-fang.
39.65. Tea-pot, seventeenth century. By Hsü Yu-ch'üan.
39.66. Tea-pot, seventeenth century. By Ch'ên Ch'ên (styled Kung-chih).
39.67. Tea-pot, dated in correspondence with A. D. 1642. By Shên Tzŭ-ch'ê.
39.68. Tea-pot, sixteenth-seventeenth century. By Ch'ên Ming-yüan.
39.69. Tea-pot, sixteenth-seventeenth century. By Ch'ên Ming-yüan.
39.70. Tea-pot, eighteenth century. By Ch'ên Han-wên.
39.71. Water-pot, sixteenth-seventeenth century. By Ch'ên Ming-yüan.
39.72. Water-pot, sixteenth-seventeenth century. By Ch'ên Ming-yüan.
39.73. Incense-box, sixteenth-seventeenth century. By Ch'ên Ming-yüan.
39.74. Brush-rest, sixteenth-seventeenth century. By Ch'ên Ming-yüan.
39.75. Oval cup, nineteenth century (?). By Ch'êng-chai.
39.76. Octagonal cup, nineteenth century (?). By Ch'êng-chai.
39.77. Fluted cup, nineteenth century (?). By Ch'êng-chai.

Curatorial work has been devoted to the study and recording of the new acquisitions listed above, and to other Chinese, Arabic, Persian, East Indian, Aramaic, and Armenian manuscripts or art objects either already in the permanent collection or submitted for purchase. Other Chinese, Japanese, Arabic, Persian, Egyptian, American, and European objects were sent or brought to the Director by their owners for information as to identity, provenance, quality, date, inscriptions, and so on. In all, 1,093 objects and 263 photographs of objects were so submitted, and written or oral reports upon them were made to the institutions or private owners requesting this service. Written translations of 21 inscriptions in Oriental languages also were made upon request.

Forty changes were made in exhibition as follows:

Chinese bronze	21
Chinese painting	7
East Indian painting	12

ATTENDANCE

The Gallery has been open to the public every day from 9 until 4:30 o'clock, with the exception of Mondays, Christmas Day, and New Year's Day.

The total attendance of visitors coming in at the main entrance was 108,638. One hundred and thirty-two other visitors on Mondays make the grand total 108,770. The total attendance for week days, exclusive of Mondays, was 77,129; Sundays, 31,509. The average week-day attendance was 297; the average Sunday attendance, 606. The highest monthly attendance was, as usual, in April, 18,736; the lowest in January, 4,351.

There were 1,577 visitors to the main office during the year. The purposes of their visits were as follows:

For general information	327
To see objects in storage	419
Far Eastern paintings	98
Near Eastern paintings and manuscripts	25
East Indian paintings and manuscripts	10
American paintings	36
Whistler prints	9
Oriental pottery, jade, lacquer, bronzes, and sculptures	165
Syrian, Arabic, and Egyptian glass	3
Byzantine objects	3
Washington Manuscripts	70
To read in the library	215
To make tracings and sketches from library books	4
To see the building and installation	15
To obtain permission to photograph or sketch	24
To submit objects for examination	176
To see members of the staff	151
To see the exhibition galleries on Mondays	42
To examine or purchase photographs	457

Of the 1,577 visitors to the offices, 132 came in on Mondays.

LECTURES, DOCENT SERVICE, AND AUDITORIUM

Eight illustrated lectures were given by members of the staff in the auditorium: total attendance, 197. Upon request, 11 groups ranging from 7 to 20 persons (total, 145) were given instruction in the study rooms, and 7 groups ranging from 5 to 24 persons (total, 114) were given docent service in the exhibition galleries. The total number of persons receiving instruction at their own request was 456.

The auditorium has been used by the following groups:

Bureau of Agricultural Economics of the U. S. Department of Agriculture: 4 meetings; total attendance, 1,200.

Federal Crop Insurance Corporation of the U. S. Department of Agriculture: 4 meetings; total attendance, 729.

Eighth American Scientific Congress: 1 meeting; attendance, 15.

PERSONNEL

William R. B. Acker, Student Assistant, left for Holland on July 3, 1939, to pursue his Chinese studies at the University of Leiden.

On August 18, 1939, the Gallery suffered a great loss in the death of its Superintendent, John Bundy, at his home in Ridgewood, N. J. Mr. Bundy had been associated with the Freer building for more than 21 years, coming here first as the representative of the architect, Charles A. Platt, of New York. During 1921 he was transferred to the staff of the Freer Gallery as Superintendent, a post he held until his death. To his work he brought not only the highest degree of technical proficiency, the fruit of long experience, but also the single-minded devotion of a strong and loyal character.

Weldon N. Rawley, who has been associated with the Gallery since December 1, 1921, was appointed Superintendent on September 20, 1939.

On March 22, 1940, Eleanor Thompson Snedeker resigned as assistant, a position she had held since November 15, 1929. On the same day the appointment of Margaret B. Arnold to succeed Mrs. Snedeker became effective.

March 28, 1940, Emil L. Zorn reported for duty as senior cabinetmaker.

Grace T. Whitney worked intermittently at the Gallery between October 9, 1939, and June 24, 1940, upon translations of Persian texts.

Respectfully submitted.

J. E. Lodge, *Director.*

Dr. C. G. Abbot,
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, 1940, conducted in accordance with the act of Congress of March 16, 1939, 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

M. W. Stirling, Chief of the Bureau, left Washington on December 26 to continue his archeological excavations in southeastern Mexico. Work was continued at Tres Zapotes until April 20. Two additional expeditions were made, one to Cerro de Mesa on the Rio Blanco in the state of Veracruz, and the other to La Venta in northern Tabasco. As last year, the work was undertaken in cooperation with the National Geographic Society. Dr. Philip Drucker accompanied Mr. Stirling as assistant archeologist.

As a result of the second season of work, the chronology of the Tres Zapotes site has now been satisfactorily determined. Indications are that the site was occupied from a date before the beginning of the Christian era but that it was abandoned sometime before the beginning of the Spanish conquest.

At Cerro de Mesa, 20 carved stone monuments were located and photographed, including one with an initial series date in the Maya calendar. This date reads 9–1–12–14–10, or 1 Oc 3 Uyab. The discovery of this monument raises to three the number of initial series now known from the state of Veracruz. Although a very early Baktun 9 date, it is later than Stela C from Tres Zapotes and the Tuxtla statuette. Of the 20 monuments at Cerro de Mesa, 12 are stelae.

Twenty monuments were also unearthed at La Venta, including five colossal heads, several beautifully carved altars, and some stelae.

At the conclusion of the work the collections were brought to Mexico City and a division of the material was made by the department of archeology of the Mexican Government, whose splendid cooperation did much to facilitate the work in the field.

Mr. Stirling attended three anthropological conferences as a delegate of the United States Government, these being the Twenty-seventh Session, International Congress of Americanists, held at Mexico City, August 5–15, 1939; the First Inter-American Congress on Indian Life, at Patzcuaro, Michoacán, April 14–24, 1940; and the Eighth American Scientific Congress, in Washington, May 10–21, 1940.

Dr. J. R. Swanton, ethnologist, devoted the greater part of the fiscal year to the assembling of material bearing on the ethnology and early history of the Caddo Indians, former inhabitants of northwestern Louisiana, southwestern Arkansas, northeastern Texas, and southeastern Oklahoma. This now covers about 700 typewritten pages including copies of original Spanish and French texts. He rendered assistance to various local organizations in preparing for the placing of markers along the trail followed by Hernando de Soto and celebrations connected with them. Investigations were undertaken for the United States Board on Geographical Names, of which Dr. Swanton is a member. A bulletin by him entitled "Linguistic Material From the Tribes of Southern Texas and Northeastern Mexico" is now in page proof.

Dr. Swanton was much gratified at the kind recognition tendered by his anthropological associates this year on the completion of 40 years' service in the Bureau and the Institution in having dedicated to him volume 100 of the Smithsonian Miscellaneous Collections entitled "Essays in Historical Anthropology of North America."

At the beginning of the fiscal year, Dr. John P. Harrington, ethnologist, was engaged in field studies at Anadarko and Apache, Okla., on the Kiowa Apache Tribe, in reality a variety of Lipan and not Apache Indians according to language, and possibly identical with the "Palomas" of early Spanish archives of New Mexico. These peoples, which can well be termed "Lipanan" from the Lipan, one of the tribes, have become extinct or have been shoved far from their former ranges, with the sole exception of the Kiowa Apache, which, because of alliance with the powerful Kiowa Tribe, succeeded in remaining in the region although assimilating the Kiowa culture.

Returning to Washington, Dr. Harrington proceeded in the latter part of July to Window Rock, Ariz., location of the administrative headquarters of the Navaho Tribe. Just as the Kiowa Apache show a subtype of Western Plains culture submerged to that of the Kiowa, so the Navaho show Great Basin culture with a varnish of many Pueblo features, and study proves that these Pueblo features are in every case directly derived from some particular Pueblo

with which the Navaho have had century-long contact. For instance, the Navaho of Ramah derive their Pueblo features from Zuñi. The most interesting discovery of all was the prominence of the buffalo in Navaho ceremony, in which the buffalo plays a role as large as among the Pueblos.

In the case of both the Kiowa Apache and Navaho, language study is the most practical means of proving that the language-bearing ancestors of these tribes came from the north, where similar languages are still spoken, occupying the interior of Alaska and of western Canada.

Proceeding October 25 to the Chipewyan of eastern Alberta, Canada, Dr. Harrington found them to consist of a southern projecting tongue of the language of the great Athabaska Lake of northern Alberta, which derives its name from Algonquian Cree Adhapaskaaw, meaning "much grass" and applied originally to the Peace River Delta at the western end of the lake. Chipewyan means "pointed skins," referring to an old habit of dress. The Chipewyan language proved to be surprisingly close to Navaho in vocabulary and construction.

Proceeding to the Sarcee language of southern Alberta, Dr. Harrington encountered another closely related tongue, and one which is most nearly affiliated with the Beaver and the Sekeneh, two dialects that lie north of the Sarcee. Dr. Harrington learned the tradition that the Sarcee and Beaver were originally one people but that in migrating southward across a frozen lake, the water monster became angered and broke the ice, those Indians on the northern side becoming the Beaver and those having crossed to the southern side becoming the Sarcee. The Sarcee were found to have adopted the culture of the neighboring Blackfeet, and the meaning of the name of the Blackfeet, Ayaatciyiiniw, was found to mean "ugly enemy."

The Carrier, Chilcotin, and Nicola dialects were reached in December. These are located on the upper Fraser River, especially about the great lakes at the head of this stream.

The Sekeneh were also reached in British Columbia and the name was found to mean "Rocky Mountain Indian."

Returning to Washington, Dr. Harrington proceeded in March to the study of the Tlinkit Indians of southeastern Alaska, finding these to be related to the Navaho, in a close relationship which cannot mean many centuries of separation.

Dr. Harrington then proceeded in May to the study of the Atchat, or Eyak, tribe, which was found to have occupied the entire eastern half of the Gulf of Alaska, a stretch of coast 350 miles long, extending from Prince William Sound in the west to Latuya Bay in the east. This tribe has earlier been called Ugalenz and Eyak, but the real

name of the tribe has never been known, Atchat meaning "on this side" or "opposite," referring to location on the Gulf of Alaska and opposite the islands. This language also proved to be closely related with the Navaho, and, as might be expected, more closely related to the languages of British Columbia and the Navaho than is the island language.

Dr. Harrington returned to Washington on June 29.

At the beginning of the fiscal year, July 1, Dr. Frank H. H. Roberts, Jr., archeologist, was engaged in excavating at the Lindenmeier site in northern Colorado. The investigations were continued through July and August and were brought to a close for the season on September 15. The area under examination was a portion of the Folsom camp site that has occupied a Bureau of American Ethnology-Smithsonian Institution Expedition's attention for several seasons. The 1939 excavations consisted of the removal of the overburden, ranging from 3½ to 5½ feet in thickness, from some 1,540 square feet of the old area of occupation, digging a series of 10 test trenches in unsampled parts of the site, and prospecting in outcroppings of the archeological layer in the banks of a deep ravine that traverses a portion of the site. The excavations in the camp remains produced more specimens than any previously made in areas of comparable size. The collection of artifacts includes typically fluted Folsom points, fluted knives, knives made from the flakes removed from the faces of the points in producing the channels, other kinds of flake knives, a variety of scrapers including several forms of the spokeshave type, flakes with small points used for marking on bone and wood, hand-hammer stones and large choppers, red and yellow ochers used for pigments, bone punches and awls, pieces of decorated bone from objects of unknown form and function, and tubular bone beads. The latter are the first to be found in the Folsom Complex. They were made from shafts of long bones. Unfortunately, the criteria for identification were removed in the process of manufacture, but they seem to be rabbit and bird. One of these specimens was decorated with a series of short parallel lines cut into its surface.

Dr. Roberts returned to the office in Washington on October 1. During the fall and winter months he read galley and page proofs on the report "Archeological Remains in the Whitewater District, Eastern Arizona. Part II. Artifacts and Burials," which appeared as Bulletin 126 of the Bureau of American Ethnology. He also served as technical advisor for "The World is Yours" programs, "Cortez, the Conquistador" and "Pompeii Lives Again," and wrote the article for "The World is Yours" pamphlet on Pompeii. He also prepared a manuscript on the subject "Developments in the Problem of the North American Paleo-Indian." Galley and page proofs were

read and corrected for this paper, which appeared in the Essays in Historical Anthropology of North America, volume 100, Smithsonian Miscellaneous Collections. Special papers on archeological subjects were prepared and presented before the Pennsylvania State Archeological Society, the American Anthropological Association, and the Eighth American Scientific Congress.

Dr. Roberts left Washington, May 26, for Colorado and resumed investigations at the Lindenmeier site. While the preliminary excavations were under way, a number of places in that vicinity were visited for the purpose of checking purported finds of Folsom material. Work at the Lindenmeier site was in full progress at the close of the fiscal year.

As editor of the Handbook of South American Indians, Dr. Julian H. Steward, anthropologist, in consultation with leading authorities on South American anthropology, drew up a working outline for this project. A two-volume, 2,000-page work to be published in 5 years, the Handbook will contain articles by specialists on the various subjects. The volume of essays in honor of Dr. Swanton, for which Dr. Steward served as technical editor, was pushed through to a successful conclusion and published on May 25, 1940. Several studies of Shoshonean archeology and ethnology were written and published.

May 26 to July 1 was spent by Dr. Steward among the Carrier Indians of British Columbia. Records of land tenure, subsistence activities, and sociopolitical changes during five generations were procured from the Stuart Lake and neighboring Carrier. It was found that within the framework of aboriginal land utilization, the sociopolitical structure had shifted from a band organization to a matrilineal clan and potlatch system derived from the coast. In historic times, the latter had given way before a patrilineal family system. Records of general ethnography, 100 specimens of native artifacts, and over 50 specimens of plants used in aboriginal times were also obtained.

In July 1939 a Latin-American bibliographic conference at Ann Arbor, Mich., was attended. In December 1939 two papers were read before the American Anthropological Association in Chicago. In May 1940 Dr. Steward served as Secretary of the Anthropological Section of the Eighth American Scientific Congress, meeting in Washington.

Henry B. Collins, Jr., ethnologist, continued working over the material which he excavated in 1936 at prehistoric Eskimo village sites around Bering Strait. The collection from one of the sites—Kurigitavik, at Cape Prince of Wales—consists of several thousand artifacts of ivory, bone, stone, clay, wood, and baleen and provides a detailed

picture of prehistoric Eskimo culture of the intermediate Thule-Punuk stage, the age of which may be estimated at around a thousand years. The material from Kurigitavik, together with that from two earlier sites, has provided needed information on the transition from the Birnirk stage to the Thule, and collections from several later sites reveal the changes leading up to the culture of modern times.

Manuscripts completed during the year included a general paper summarizing the archeological evidence bearing on the origin of the Eskimo and the cultural position of this group in relation to neighboring peoples in Asia and America; and shorter papers on Eskimo art, on the voyages of Vitus Bering (for the Smithsonian radio series), and on prehistoric Indian crania from the Southeast.

Early in July 1939 Dr. William N. Fenton, associate anthropologist, left for Salamanca, N. Y., to conduct ethnobotanical studies among the Iroquois Indians of New York and Canada. He visited the Senecas of Allegany and Cornplanter Reservations, in southwestern New York and Pennsylvania, and the Mohawks of St. Regis Reservation, N. Y., and Caughnawaga, Province of Quebec. He called briefly on the Hurons of Lorette and the Mohawks of Oka, Lake of the Two Mountains near Montreal. At Ottawa he studied the extensive catalog of Iroquois ethnological photographs in the National Museum of Canada. The month of August was passed among the Iroquois of Six Nations Reserve in Ontario, where he worked with Simeon Gibson, interpreter to the late J. N. B. Hewitt. About a hundred herbarium specimens were collected; when identified at the National Hebarium, these proved to be largely duplicates of medical plants gathered in previous years of field work among the Senecas. Moreover, interesting similarities of plant use and terminology were noted among Seneca, Mohawk, and Cayuga-Onondaga remnants who now live on widely separated reservations. Such resemblances suggest older basic Iroquois botanical concepts and medical practices. Photographs illustrating various activities in Iroquois herbalism comprise part of 100 negatives that were taken in the field. The early notes of F. W. Waugh were reviewed with Mohawk and Cayuga informants, and some paradigms in the several Iroquois dialects were recorded for comparative purposes. Returning to Allegany for the Green Corn Festival, Dr. Fenton reached Washington in mid-September.

During the winter's office work, Dr. Fenton read in the historical literature and located towns of the several Iroquois bands at successive periods in their history, with a view to outlining the major cultural problems arising from Iroquois tribal movements and conquests. This study, now published, attempts to begin for the Northeast the type of systematic approach that Dr. Swanton has accomplished for the Southeast. Dr. Fenton also published A Further Quest for Iroquois

Medicines, in Explorations and Field-Work of the Smithsonian Institution in 1939, and An Herbarium from the Allegany Senecas, in The Historic Annals of Southwestern New York. Several lectures on various aspects of Iroquois culture were delivered to Washington audiences, and in June, Dr. Fenton addressed a regional meeting of botanists at the Allegany School of Natural History on "Iroquois Ethnobotany."

On May 2, 1940, Dr. Fenton again left for Salamanca to resume field work among the Seneca. Working primarily at Allegany Reservation, he also visited Tonawanda, collecting early spring medicinal plants. This season, work with informants was combined with a project to study Iroquois masks and ceremonial equipment in museums located near the Iroquois. At the close of the fiscal year, the extensive Converse collections in the New York State Museum (Albany) and Montgomery County Historical Society (Fort Johnson), and the Boyle and Chiefswood collections in the Royal Ontario Museum of Archaeology (Toronto) were measured and photographed. The pictures have proved to be useful in eliciting new material from informants and promise future usefulness in establishing local types of carving. A complete record of the mask-making technique has been made together with photographs of crucial stages in the process, and the rituals of several shamanistic societies have been taken with a flash camera for the first time. Dr. Fenton was engaged in field work at the close of the fiscal year.

SPECIAL RESEARCHES

Miss Frances Densmore, a collaborator of the Bureau, continued her study of Indian music chiefly by completing manuscripts for publication. A trip was made to Wisconsin Dells, Wis., to confer with Evergreen Tree, a Cochiti Indian, and to obtain further information concerning songs he recorded several years previously. Additional information concerning the peyote cult was also received from Winnebago informants in Wisconsin and Minnesota.

Nine manuscripts on pueblo music were recast and combined in a manuscript entitled "Music of Acoma, Isleta, and Cochiti Pueblos, New Mexico." Four manuscripts on "Choctaw Music," previously submitted, were similarly combined. The manuscript on "Winnebago Music" was completed, and a portion of the section on the peyote cult was restudied, extended, and retyped. These three manuscripts are now ready for publication.

Eleven manuscripts on the music of the Seminole in Florida were combined in a tentative manuscript of more than 300 pages. The number of transcribed Seminole songs now in possession of the

Bureau is 173 and these were arranged in a tentative order, corresponding to the order in the manuscript. About 70 Seminole songs, recorded in 1932 and 1933, have not yet been submitted to the Bureau. Work was begun on this material and a few of the songs were transcribed.

A peculiar custom observed in a few of the oldest Choctaw and Seminole songs consists in an embellishment of the melody in repetitions. It was found that the several renditions differed from one another and that the Indians were able to sing the simple melody, without the embellishments. These consisted in the addition of short, unimportant tones, without changing the trend of the melody. The custom resembles the improvisation which was noted in the songs of the Tule Indians of Panama and is in contrast to the exact repetitions of songs by northern tribes of Indians. A similar custom exists among Negroes on the Island of Trinidad in the British West Indies, and has been called Calypso.

According to Louis C. Elson (Curiosities of Music, p. 278, Oliver Ditson & Co., Boston, 1880), "The power of improvisation which is so well developed in the African Negro, is fully sustained by his descendants * * *."

Miss Densmore presented to the Bureau the original manuscript of an Onondaga Thanksgiving Song, written down for her in 1903 at Syracuse, N. Y., by Albert Cusick, a prominent Onondaga from the reservation near that city. The native words with their translation were also obtained. The song is in two parts, the lower being rhythmic and resembling a vocal accompaniment to the melody.

EDITORIAL WORK AND PUBLICATIONS

The editorial work of the Bureau has continued during the year under the immediate direction of the editor, M. Helen Palmer. There were issued three bulletins, as follows:

Bulletin 101. War ceremony and peace ceremony of the Osage Indians, by Francis La Flesche. vii+280 pp., 13 pls., 1 fig.

Bulletin 124. Nootka and Quileute music, by Frances Densmore. xxvi+358 pp., 24 pls., 7 figs.

Bulletin 125. Ethnography of the Fox Indians, by William Jones. Edited by Margaret Welpley Fisher. ix+156 pp.

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

Bulletin 126. Archeological remains in the Whitewater District, Eastern Arizona. Part II. Artifacts and burials, by Frank H. H. Roberts, Jr. With appendix, Skeletal remains from the Whitewater District, Eastern Arizona, by T. D. Stewart.

Bulletin 127. Linguistic material from the tribes of southern Texas and northeastern Mexico, by John R. Swanton.

Bulletin 128. Anthropological papers, numbers 13–18.

No. 13. The mining of gems and ornamental stones by American Indians, by Sydney H. Ball.

No. 14. Iroquois suicide: A study in the stability of a culture pattern, by William N. Fenton.

No. 15. Tonawanda Longhouse ceremonies: Ninety years after Lewis Henry Morgan, by William N. Fenton.

No. 16. The Quichua-speaking Indians of the Province of Imbabura (Ecuador) and their anthropometric relations with the living populations of the Andean area, by John Gillin.

No. 17. Art processes in birchbark of the River Desert Algonquin, a circumboreal trait, by Frank G. Speck.

No. 18. Archeological reconnaissance of southern Utah, by Julian H. Steward.

Bulletin 129. An archeological survey of Pickwick Basin in the adjacent portions of the States of Alabama, Mississippi, and Tennessee, by William S. Webb and David L. De Jarnette. With additions by Walter P. Jones, J. P. E. Morrison, Marshall T. Newman and Charles E. Snow, and William G. Haag.

Bulletin 130, Archeological investigations at Buena Vista Lake, Kern County, California, by Waldo L. Wedel. With appendix, Skeletal remains from Buena Vista sites, California, by T. Dale Stewart.

Bulletin 131. Peachtree Mound and village site, Cherokee County, North Carolina, by Frank M. Setzler and Jesse D. Jennings. With appendix, Skeletal remains from the Peachtree Site, North Carolina, by T. Dale Stewart.

Publications distributed totaled 13,984.

LIBRARY

There has been no change in the library staff during the fiscal year. Accessions during the fiscal year totaled 364.

The section of North American periodicals has been reclassified and reshelved and a temporary shelf-list made. Permanent catalog and shelf-list cards have been made for part of this material.

The library staff has relabeled and reshelved 4,687 books. All these are now in the Library of Congress classification. As of June 30, 1940, practically all North American material has been reclassified and reshelved, almost all Central and South American material, and about two-thirds of the sections on ethnology other than American. Library of Congress cards have been ordered when available for all books reclassified which did not already have them. Practically all these cards have been prepared and filed in the catalog.

The Librarian attended the meetings of the Inter-American Bibliographical and Library Association at Washington, D. C., in February and the meetings of the Eighth American Scientific Congress at Washington in May.

ILLUSTRATIONS

Following is a summary of work accomplished during the fiscal year by E. G. Cassedy, illustrator:

Line drawings	152	Photographs retouched	35
Stipple drawings	4	Negatives retouched	25
Wash drawings	14	Charts	3
Lettering jobs	184	Mechanical drawings	5
Plates assembled	54		
Graphs	22	Total	515
Maps	17		

MISCELLANEOUS

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

Personnel.—Miss M. H. Palmer was appointed on July 1, 1939, as editor to fill the vacancy caused by the retirement of Stanley Searles. Miss Ethelwyn E. Carter, junior stenographer, resigned on September 17, 1939, and Mrs. Catherine M. Phillips was appointed on November 6, 1939, to fill this vacancy.

Respectfully submitted.

M. W. Stirling, *Chief.*

Dr. C. G. Abbot,
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 during the fiscal year ended June 30, 1940:

The congressional appropriation was $44,880, an increase of $280 over 1939, the extra amount having been allowed for step-ups in the salaries of certain exchange employees. The collections from repayments amounted to $4,112.24, making the total available resources $48,992.24.

During the year 639,344 packages passed through the service, a decrease of 75,533. The weight was 527,545 pounds, a decrease of 192,149 pounds. These large decreases in the number and weight of packages were due to the interruption of shipments of exchanges between the United States and a number of foreign countries caused by the wars in Europe and in China.

The number and weight of packages sent and received through the service is given in the following table:

	Packages		Weight	
	Sent	Received	Sent	Received
			Pounds	*Pounds*
United States parliamentary documents sent abroad	342,246		137,948	
Publications received in return for parliamentary documents		5,477		14,247
United States departmental documents sent abroad	120,681		119,332	
Publications received in return for departmental documents		6,254		17,790
Miscellaneous scientific and literary publications sent abroad	132,052		178,995	
Miscellaneous scientific and literary publications received from abroad for distribution in the United States		32,634		59,233
Total	594,979	44,365	436,275	91,270
Grand total	639,344		527,545	

There were shipped abroad 1,894 boxes, a decrease of 1,129 boxes from the preceding year. Of these boxes, 486 were for depositories of full sets of United States governmental documents, and the remainder were for miscellaneous institutions and individuals. The very large decrease in the number of boxes shipped abroad was due, as stated above, to the interruption of the normal activities of the Exchange Service by the foreign wars.

In addition to the packages transmitted abroad in boxes, there were forwarded by mail, postage paid, 95,317 packages, an increase of 4,962 over last year. Also, a large number of packages are sent directly to their destinations by mail under government frank, an arrangement for the franking privilege having been made between the postal authorities of the United States and those of certain foreign countries. A list of the countries with which this privilege is in effect is as follows: Canada, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Guatemala, Haiti, Honduras, Mexico, Newfoundland (including Labrador), Nicaragua, Panama, Paraguay, Peru, Salvador, Uruguay, and Venezuela.

The European war, which began September 3, 1939, has greatly interrupted the activities of the International Exchange Service. At the close of the fiscal year the interchange of publications was suspended between the United States and all European countries except Great Britain, Finland, and the Soviet Republic. Shipments to Finland are being made via Petsamo, and shipments to the U. S. S. R., by way of Vladivostok.

On account of the Japanese invasion of China, the Chinese Bureau of International Exchanges was moved from Nanking to Chungking and the Institution forwarded several large consignments to that bureau via Haiphong, French Indochina. That channel of transmission, however, was closed during the middle of the year owing to operations of the Japanese in that section. Shipments of exchanges for the Library Association of China and the other organizations mentioned in the preceding report that have set up temporary quarters in Hong Kong are being continued.

At the outbreak of the European war the London School of Economics and Political Science wrote the Institution that

> it is intended to maintain the work of this Library as usual despite the outbreak of hostilities between Great Britain and Germany and that accordingly it would be much appreciated if shipments of United States official documents would be sent to the Library as usual.

On account of difficulties in shipping conditions caused by the war it was not possible immediately to transmit consignments to Great Britain. When, in January 1940, transmissions to that country were resumed, the Librarian of the London School wrote the Institution in part as follows:

> In this matter I have been in close touch with the Librarian of the Patent Office, which regularly receives U. S. patent specifications through your agency. I know he would wish to join with me in saying that we are very sensible of our obligations to you in this matter, and, whilst deploring the additional work and inconvenience which are inevitably caused to you at the present time, warmly appreciate the invaluable assistance you are rendering to learned work in this country.

In June the French Bureau of International Exchanges informed the Institution that 5 boxes forwarded to that bureau in April were destroyed by fire at the Havre Railroad Station on the night of May 19. Another consignment, consisting of 5 boxes, forwarded in December 1939 to the Royal Danish Academy of Sciences in Copenhagen, according to a report made by the American Scantic Line, was destroyed on the dock in Bergen, Norway, by fire caused by airplane bombardment on April 14, 1940.

The above-mentioned consignments are the only shipments that have been lost during the war, so far as have been reported to the Institution. No doubt a few others have been lost in transit, but definite information regarding the matter will not be received until the end of the war.

In April 1940 a letter was received from Dr. A. Holmberg, Chief Librarian, Royal Swedish Academy of Sciences, Stockholm, stating that the work performed by that Academy in distributing exchange packages to Swedish correspondents henceforth would be assumed by the Royal Library.

The Smithsonian system of international exchanges between the United States and foreign countries has been in operation for 90 years, during 72 of which the Academy of Sciences has acted as the Swedish exchange distributing agency. Two other establishments, which at the same time (1868) took over the distribution of packages for correspondents in their countries, are still carrying on the exchange work—the Royal Norwegian University and the Royal Danish Academy of Sciences.

Shipments of exchanges to Spain, which have been held up since 1936, were resumed in April 1940; but, on account of the disruption to shipping conditions due to the spread of the European war, it was not possible to continue transmissions to that country.

FOREIGN DEPOSITORIES OF GOVERNMENTAL DOCUMENTS

Sets of United States governmental documents are now forwarded to 104 foreign depositories, a decrease of 4 sets from last year. Sixty of these depositories receive full sets and 44, partial sets. The sets that were discontinued were for the Province of Buenos Aires, Danzig, Lübeck, and Vienna.

The depository in Brazil was changed from the Bibliotheca Nacional to Instituto Nacional do Livro, Rio de Janeiro. The depository in Mexico was changed from Departamento Autónomo de Prensa y Publicidad to Dirección General de Información, Mexico, D. F. The Nicaraguan depository was changed from the Superintendente de Archivos Nacionales, Managua, to Ministerio de Relaciones Exteriores, Managua.

DEPOSITORIES OF FULL SETS

ARGENTINA: Dirección de Investigaciones, Archivo y Propaganda, Ministerio de Relaciones Exteriores 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: Parliamentary Library, Adelaide.
- TASMANIA: Parliamentary Library, Hobart.
- VICTORIA: Public Library of Victoria, Melbourne.
- WESTERN AUSTRALIA: Public Library of Western Australia, Perth.

BELGIUM: Bibliothèque Royale, Bruxelles.

BRAZIL: Instituto Nacional do Livro, Rio de Janeiro.

CANADA: Library of Parliament, Ottawa.
- MANITOBA: Provincial Library, Winnipeg.
- ONTARIO: Legislative Library, Toronto.
- QUEBEC: Library of the Legislature of the Province of Quebec.

CHILE: Biblioteca Nacional, Santiago.

CHINA: Bureau of International Exchange, Ministry of Education, Chungking.

COLOMBIA: Biblioteca Nacional, Bogotá.

COSTA RICA: Oficina de Depósito y Canje Internacional de Publicaciones, San José.

CUBA: Secretaría de Estado, Dirección de Relaciones Culturales, Habana.

CZECHOSLOVAKIA: Bibliothèque de l'Assemblée Nationale, Prague.

DENMARK: Kongelige Danske Videnskabernes Selskab, Copenhagen.

EGYPT: Bureau des Publications, Ministère des Finances, Cairo.

ESTONIA: Riigiraamatukogu (State Library), Tallinn.

FINLAND: Parliamentary Library, Helsingfors.

FRANCE: Bibliothèque Nationale, Paris.

GERMANY: Reichstauschstelle im Reichsministerium für Wissenschaft, Erziehung und Volksbildung, Berlin, N. W. 7.
- AUSTRIA: National-Bibliothek, Wien, I.
- BADEN: Universitäts-Bibliothek, Freiburg. (Depository of the State of Baden.)
- BAVARIA: Bayerische Staatsbibliothek, München.
- PRUSSIA: Preussische Staatsbibliothek, Berlin, N. W. 7.
- SAXONY: Sächsische Landesbibliothek, Dresden—N. 6.
- WURTEMBURG: Landesbibliothek, Stuttgart.

GREAT BRITAIN:
- ENGLAND: British Museum, London.
- LONDON: London School of Economics and Political Science. (Depository of the London County Council.)

HUNGARY: Library, Hungarian House of Delegates, Budapest.

INDIA: Imperial Library, Calcutta.

IRELAND: National Library of Ireland, Dublin.

ITALY: Ministero dell'Educazione Nazionale, Rome.

JAPAN: Imperial Library of Japan, Tokyo.

LATVIA: Bibliothèque d'État, Riga.

LEAGUE OF NATIONS: Library of the League of Nations, Geneva, Switzerland.

MEXICO: Dirección General de Información, Mexico, D. F.

NETHERLANDS: Royal Library, The Hague.

NEW ZEALAND: General Assembly Library, Wellington.

NORTHERN IRELAND: H. M. Stationery Office, Belfast.
NORWAY: Universitets-Bibliothek, Oslo. (Depository of the Government of Norway.)
PERU: Sección de Propaganda y Publicaciones, Ministerio de Relaciones Exteriores, Lima.
POLAND: Bibliothèque Nationale, Warsaw.
PORTUGAL: Bibliotheca Nacional, Lisbon.
RUMANIA: Academia Română, Bucharest.
SPAIN: Cambio Internacional de Publicaciones, Avenida de 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: All-Ukrainian Association for Cultural Relations with Foreign Countries, Kiev.
URUGUAY: Oficina de Canje Internacional de Publicaciones, Montevideo.
VENEZUELA: Biblioteca Nacional, Caracas.
YUGOSLAVIA: Ministère de l'Education, Belgrade.

DEPOSITORIES OF PARTIAL SETS

AFGHANISTAN: Ministry of Foreign Affairs, Publications Department, Kabul.
BOLIVIA: Biblioteca del H. Congreso Nacional, La Paz.
BRAZIL:
MINAS GERAES: Directoria Geral de Estatistica em Minas, Bello Horizonte.
RIO DE JANEIRO: Bibliotheca da Assemblea Legislativa do Estado, Nictheroy.
BRITISH GUIANA: Government Secretary's Office, Georgetown, Demerara.
BULGARIA: Ministère des Affaires Étrangères, Sofia.
CANADA:
ALBERTA: Provincial Library, Edmonton.
BRITISH COLUMBIA: Provincial Library, Victoria.
NEW BRUNSWICK: Legislative Library, Fredericton.
NOVA SCOTIA: Provincial Secretary of Nova Scotia, Halifax.
PRINCE EDWARD ISLAND: Legislative Library, Charlottetown.
SASKATCHEWAN: Legislative Library, Regina.
CEYLON: Chief Secretary's Office (Record Department of the Library), Colombo.
CHINA: National Library of Peiping, % Fung Ping Shan Chinese Library, Hong Kong.
DOMINICAN REPUBLIC: Biblioteca del Senado, Ciudad Trujillo.
ECUADOR: Biblioteca Nacional, Quito.
GERMANY:
BREMEN: Staatsbibliothek.
HAMBURG: Staats-und Universitäts-Bibliothek.
HESSE: Universitäts-Bibliothek, Giessen.
THURINGIA: Rothenberg-Bibliothek, Landesuniversität, Jena.
GREECE: Library of Parliament, Athens.
GUATEMALA: Biblioteca Nacional, Guatemala.
HAITI: Secrétaire d'État des Relations Extérieures, Port-au-Prince.
HONDURAS: Biblioteca y Archivo Nacionales, Tegucigalpa.
ICELAND: National Library, Reykjavik.

India:
Bengal: Secretary, Bengal Legislative Council Department, Council House, Calcutta.
Bihar and Orissa: Revenue Department, Patna.
Bombay: Undersecretary to the Government of Bombay, General Department, Bombay.
Burma: Secretary to the Government of Burma, Education Department, Rangoon.
Madras: Chief Secretary to the Government of Madras, Public Department, Madras.
Punjab: Chief Secretary to the Government of the Punjab, Lahore.
United Provinces of Agra and Oudh: University of Allahabad, Allahabad.
Jamaica: Colonial Secretary, Kingston.
Liberia: Department of State, Monrovia.
Lithuania: Ministère des Affaires Étrangères, Kaunas (Kovno).
Malta: Minister for the Treasury, Valletta.
Newfoundland: Department of Home Affairs, St. John's.
Nicaragua: Ministerio de Relaciones Exteriores, Managua.
Panama: Secretaría de Relaciones Exteriores, Panama.
Paraguay: Secretario de la Presidencia de la República, Asunción.
Salvador: Ministerio de Relaciones Exteriores, San Salvador.
Straits Settlements: Colonial Secretary, Singapore.
Thailand: Department of Foreign Affairs, Bangkok.
Vatican City: Biblioteca Apostolica Vaticana, Vatican City, Italy.

INTERPARLIAMENTARY EXCHANGE OF THE OFFICIAL JOURNAL

There are sent to foreign depositories 104 copies of the Congressional Record and the Federal Register. A list of the depositories of those documents is given below:

DEPOSITORIES OF CONGRESSIONAL RECORD

Albania: Ministrija Mbretnore e Punëvetë Jashtme, Tirana.
Argentina:
Biblioteca del Congreso Nacional, Buenos Aires.
Cámara de Diputados, Oficina de Información Parlamentaria, Buenos Aires.
Boletín Oficial de la República Argentina, Ministerio de Justicia e Instrucción Pública, Buenos Aires.
Australia:
Library of the Commonwealth Parliament, 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, Perth.
Belgium: Bibliothèque de la Chambre des Représentants, Bruxelles.
Brazil:
Bibliotheca do Congresso Nacional, Rio de Janeiro.
Amazonas: Archivo, Bibliotheca 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: "A Federação," Porto Alegre.
Sergipe: Bibliotheca Publica do Estado de Sergipe, Aracajú.
São Paulo: Diario Official do Estado de São Paulo, São Paulo.

BRITISH HONDURAS: Colonial Secretary, Belize.
CANADA:
Library of Parliament, Ottawa.
Clerk of the Senate, Houses of Parliament, Ottawa.
CHINA: National Central Library, Nanking.
CUBA: Biblioteca del Capitolio, Habana.
CZECHOSLOVAKIA: Bibliothèque de l'Assemblée Nationale, Prague.
DENMARK: Rigsdagens Bureau, Copenhagen.
EGYPT:
Chambre des Députés, Cairo. Sénat, Cairo.
FRANCE:
Chambre des Députés, Service de l'Information Parlementaire Étrangère, Paris.
Bibliothèque du Sénat, au Palais du Luxembourg, Paris.
Bureau de Documentation Générale, Ministère des Finances, Paris I.
Bibliothéque, Direction des Accords commerciaux, Ministére du Commerce, Paris.
GERMANY:
Deutsche Reichstags-Bibliothek, Berlin, N. W. 7.
Reichsfinanzministerium, Berlin, W. 8.
ANHALT: Anhaltische Landesbücherei, Dessau.
AUSTRIA: Bibliothek im Parlament, Wien I.
BRAUNSCHWEIG: Bibliothek des Braunchsweigischen Staatministeriums, Braunschweig.
MECKLENBURG: Staatsministerium, Schwerin.
OLDENBURG: Oldenburgisches Staatsministerium, Oldenburg i. O.
SCHAUMBURG-LIPPE: Schaumburg-Lippische Landesregierung, Bücheburg.
GIBRALTAR: Gibraltar Garrison Library Committee, Gibraltar.
GREAT BRITAIN: Library of the Foreign Office, London.
GREECE: Library of Parliament, Athens.
GUATEMALA: Biblioteca de la Asamblea Legislativa, Guatemala.
HONDURAS: Biblioteca del Congreso Nacional, Tegucigalpa.
HUNGARY: A Magyar országgyülés könyvtará, Budapest.
INDIA: Legislative Department, Simla.
INDOCHINA: Gouverneur Général de l'Indochine, Hanoi.
IRAN: Library of the Iranian Parliament, Téhéran.
IRAQ: Chamber of Deputies, Baghdad.
IRISH FREE STATE: Dail Eireann, Dublin.
ITALY:
Biblioteca della Camera dei Fasci e delle Corporazione, Rome.
Biblioteca del Senato del Regno, Rome.
Ufficio degli Studi Legislativi, Senato del Regno, Rome.
LATVIA: Valsts Biblioteka, Riga.
LEAGUE OF NATIONS: Library of the League of Nations, Geneva, Switzerland.
LEBANON: Ministère des Finances de la République Libanaise, Service du Matériel, Beirut.
LIBERIA: Department of State, Monrovia.
MEXICO: Dirección General de Información, 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.

MEXICO.—Continued.

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.

MEXICO: 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 LEON: Biblioteca del Estado, Monterey.

OAXACA: Periódico Oficial, Palacio de Gobierno, Oaxaca.

PUEBLA: Secretaría General de Gobierno, Puebla.

QUERETARO: Secretaría General de Gobierno, Sección de Archivo, Queretaro.

SAN LUIS POTOSI: Congreso del Estado, San Luis Potosi.

SINALOA: Gobernador del Estado de Sinaloa, Culiacan.

SONORA: Gobernador del Estado de Sonora, Hermosillo.

TABASCO: Secretaría General de Gobierno, Sección 3a, Ramo de Prensa, Villahermosa.

TAMAULIPAS: Secretaría General de Gobierno, Victoria.

TLAXCALA: Secretaría de Gobierno del Estado, Tlaxcala.

VERA CRUZ: Gobernador del Estado de Vera Cruz, Departamento de Gobernación y Justicia, Jalapa.

YUCATÁN: Gobernador del Estado de Yucatán, Mérida, Yucatán.

NETHERLANDS: Bibliotheek van de Tweede Kamer der Staten-General, The Hague.

NETHERLANDS INDIES: Volksraad von Nederlandsch-Indië, Batavia, Java.

NEW ZEALAND: General Assembly Library, Wellington.

NORWAY: Storthingets Bibliothek, Oslo.

PERU: Cámara de Diputados, Lima.

POLAND: Bibljoteka Narodowa, Warsaw.

PORTUGAL: Secretario da Assemblea Nacional, Lisboa.

RUMANIA:

Bibliothèque de la Chambre des Députés, Bucharest.

Ministère des Affaires Étrangères, Bucharest.

SPAIN:

Biblioteca del Congreso Nacional, Madrid.

CATALUNYA: Biblioteca del Parlament de Catalunya, Barcelona.

SWITZERLAND: Bibliothèque de l'Assemblée Fédérale Suisse, Berne.

BERN: Staatskanzlei des Kantons Bern.

ST. GALLEN: Staatskanzlei des Kantons St. Gallen.

SCHAFFHAUSEN: Staatskanzlei des Kantons Schaffhausen.

ZÜRICH: Staatskanzlei des Kantons Zürich.

TURKEY: Turkish Grand National Assembly, Ankara.

UNION OF SOUTH AFRICA:

Library of Parliament, Cape Town, Cape of Good Hope.

State Library, Pretoria, Transvaal.

URUGUAY: Diario Oficial, Calle Florida 1178, Montevideo.

VENEZUELA: Biblioteca del Congreso, Caracas.

VATICAN CITY: Biblioteca Apostolica Vaticana, Vatican City, Italy.

FOREIGN EXCHANGE AGENCIES

A list of the foreign agencies through which the exchange of publications is effected is given below. Most of those agencies forward consignments to the Institution for distribution in the United States.

LIST OF AGENCIES

ALGERIA, via France.
ANGOLA, via Portugal.
ARGENTINA: Comisión Protectora de Bibliotecas Populares, Canje Internacional, Calle Callao 1540, Buenos Aires.
AUSTRIA, via Germany.
AZORES, via Portugal.
BELGIUM: Service Belge des Échanges Internationaux, Bibliothèque Royale de Belgique, Bruxelles.
BOLIVIA: Sent by mail.
BRAZIL: Serviço de Permutações Internacionaes, Bibliotheca Nacional, Rio de Janeiro.
BRITISH GUIANA: Sent by mail.
BRITISH HONDURAS: Sent by mail.
BULGARIA: Sent by mail.
CANADA: Sent by mail.
CANARY ISLANDS, via Spain.
CHILE: Sent by mail.
CHINA: Bureau of International Exchange, Ministry of Education, Chungking.
COLOMBIA: Sent by mail.
COSTA RICA: Sent by mail.
CUBA: Sent by mail.
CZECHOSLOVAKIA: Service des Echanges Internationaux, Bibliothèque de l'Assemblée Nationale, Prague 1–79.
DANZIG: Sent by mail.
DENMARK: Service Danois des Échanges Internationaux, Kongelige Danske Videnskabernes Selskab, Copenhagen V.
DOMINICIAN REPUBLIC: Sent by mail.
ECUADOR: Sent by mail.
EGYPT: Government Press, Publications Office, Bulaq, Cairo.
ESTONIA: Riigiraamatukogu (State Library), Tallinn.
FINLAND: Delegation of the Scientific Societies of Finland, Kasärngatan 24, Helsingfors.
FRANCE: Service Français des Échanges Internationaux, 110 Rue de Grenelle, Paris.
FRENCH GUIANA: Sent by mail.
GERMANY: Amerika-Institut, Universitätstrasse 8, Berlin, N. W. 7.
GREAT BRITAIN AND IRELAND: Wheldon & Wesley, 721 North Circular Road, Willesden, London, NW. 2.
GREECE: Sent by mail.
GREENLAND, via Denmark.
GUATAMALA: Sent by mail.
HAITI: Sent by mail.
HONDURAS: Sent by mail.
HUNGARY: Hungarian Libraries Board, Ferenciektere 5, Budapest, IV.
ICELAND, via Denmark.
INDIA: Superintendent of Government Printing and Stationery, Bombay.

ITALY: Ufficio degli Scambi Internazionali, Ministero dell'Educazione Nazionale, Rome.
JAMAICA: Sent by mail.
JAPAN: International Exchange Service, Imperial Library of Japan, Uyeno Park, Tokyo.
LATAKIA: Sent by mail.
LATVIA: Service des Échanges Internationaux, Bibliothèque d'Etat de Lettonie, Riga.
LEBANON: Sent by mail.
LIBERIA: Sent by mail.
LITHUANIA: Sent by mail.
LUXEMBOURG, via Belgium.
MADAGASCAR, via France.
MADEIRA, via Portugal.
MEXICO: Sent by mail.
MOZAMBIQUE, via Portugal.
NETHERLANDS: International Exchange Bureau of the Netherlands, Royal Library, The Hague.
NEWFOUNDLAND AND LABRADOR: Sent by mail.
NEWFOUNDLAND AND LABRADOR: Sent by mail.
NEW SOUTH WALES: Public Library of New South Wales, Sydney.
NEW ZEALAND: General Assembly Library, Wellington.
NICARAGUA: Sent by mail:
NORWAY: Service Norvégien des Échanges Internationaux, Bibliothèque de l'Université Royale, Oslo.
PALESTINE: Jewish National and University Library, Jerusalem.
PANAMA: Sent by mail.
PARAGUAY: Sent by mail.
PERU: Sent by mail.
POLAND: Service Polonais des Échanges Internationaux, Bibliothèque Nationale, Warsaw.
PORTUGAL: Secção de Trocas Internacionaes, Bibliotheca Nacional, Lisboa.
QUEENSLAND: Bureau of Exchanges of International Publications, Chief Secretary's Office, Brisbane.
RUMANIA: Soussecrétariat d'Etat de la Propagande, Direction de la Presse, Service des Échanges Internationaux, Bucharest.
SALVADOR: Sent by mail.
SOUTH AUSTRALIA: South Australian Government Exchanges Bureau, Government Printing and Stationery Office, Adelaide.
SPAIN: Cambio Internacional de Publicaciónes, Avenida de Calvo Sotelo 20, Madrid.
SURINAM: Sent by mail.
SWEDEN: Kongliga Biblioteket, Stockholm.
SWITZERLAND: Service Suisse des Échanges Internationaux, Bibliothèque Centrale Fédérale, Berne.
SYRIA: Sent by mail.
TASMANIA: Secretary to the Premier, Hobart.
THAILAND: Sent by mail.
TRINIDAD: Sent by mail.
TUNIS, via France.
TURKEY: Ministry of Education, Department of Printing and Engraving, Istanbul.

UNION OF SOUTH AFRICA: Government Printing and Stationery Office, Capetown, Cape of Good Hope.
UNION OF SOVIET SOCIALIST REPUBLICS: Library of the Academy of Sciences of the U. S. S. R., Exchange Service, Leningrad, V. O.
URUGUAY: Sent by mail.
VENEZUELA: Sent by mail.
VICTORIA: Public Library of Victoria, Melbourne.
WESTERN AUSTRALIA: Public Library of Western Australia, Perth.
YUGOSLAVIA: Section des Échanges Internationaux, Ministère des Affaires Étrangères, Belgrade.

Mr. Frank E. Gass, who has been with the Institution for 54 years, having been appointed August 1, 1886, as a messenger boy and who is now correspondence clerk of the International Exchanges, reached the statutory retirement age in February but was granted an extension of 1 year.

Respectfully submitted.

C. W. SHOEMAKER, *Chief Clerk.*

Dr. C. G. ABBOT,
Secretary, Smithsonian Institution.

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, 1940.

The regular appropriation made by Congress was $237,060, all of which was expended.

FUNCTIONS OF THE ZOO

The National Zoological Park is far more than merely a recreation place; an eminent scientific man once referred to it as "a museum of living animals." Every day in the year thousands of people visit the Zoo. Some come merely for enjoyment and recreation, but others come with definite purposes in mind. Among them are many students both primary and advanced. Artists, photographers, and research workers all find material and inspiration for their studies and are afforded all possible facilities. Research of any kind that can be carried on without harm to the animals is encouraged.

Such organizations as the Audubon Society, Girl Scouts, Boy Scouts, geological classes, and others regularly come to the Zoo to study the native wildlife and interesting geological formations in the Park. Requests for technical information regarding animals and zoos are constantly received at the Zoo office by personal inquiry, telephone calls, and letters from all over the world.

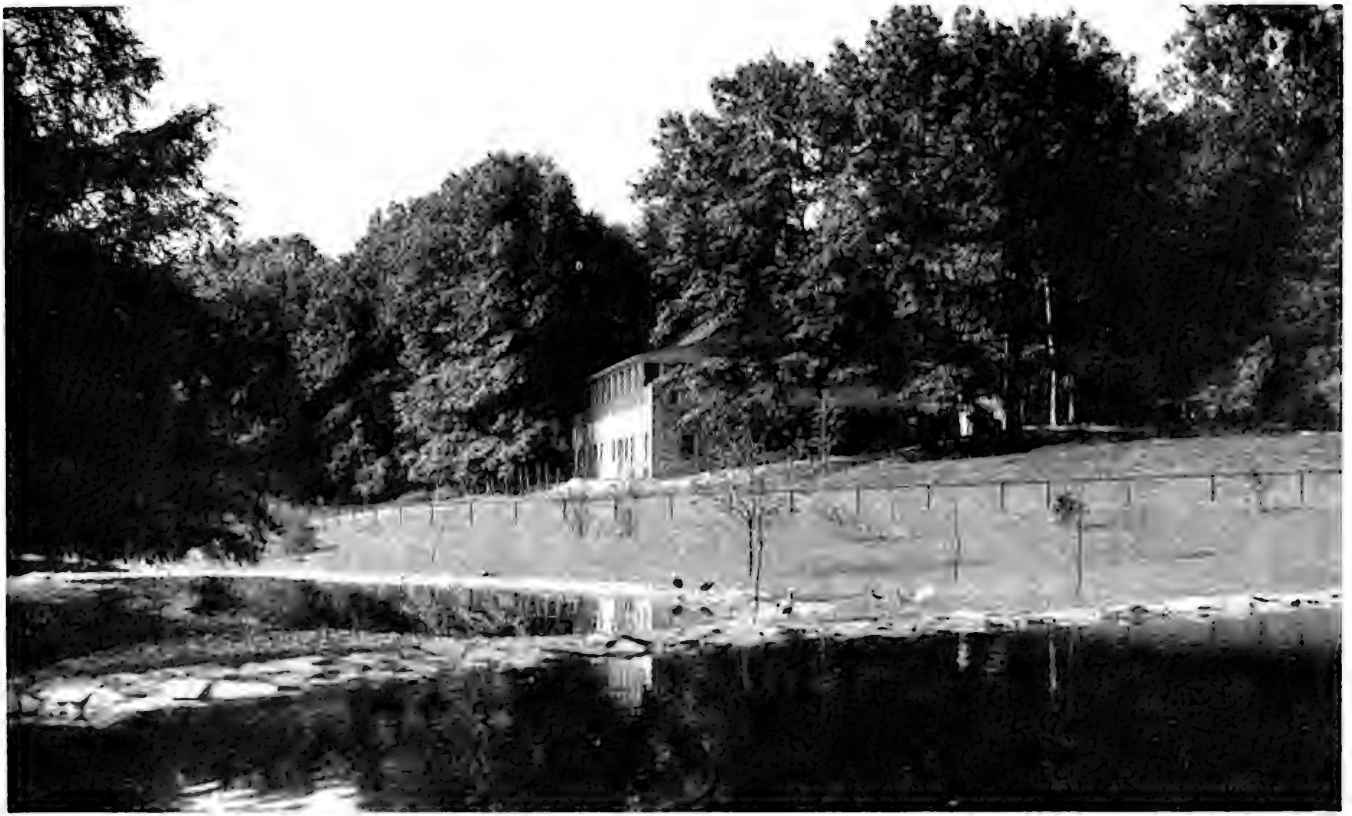
IMPROVEMENTS

Continuance of W. P. A. assistance resulted in the completion of the following work during the year:

Four paddocks about 80 by 150 feet were constructed along the road above the American bison. These are the barless-pit type without obstruction to the view between the people and the animals.

Five paddocks were constructed across from the large-mammal house. These average about 50 by 60 feet and are designed to accommodate the American representatives of the camel family, llama, alpaca, vicuna, and guanaco. These paddocks are likewise of the barless-pit type and can accommodate a considerable variety of animals in addition to those listed above.

A series of four waterfowl ponds was constructed across the road from the old waterfowl pond. The pools are cement-lined, but from a



NEW RESTAURANT BUILDING AT THE NATIONAL ZOOLOGICAL PARK.

VIEW FROM NEW RESTAURANT BUILDING AT THE NATIONAL ZOOLOGICAL PARK, SHOWING NEW WATERFOWEL PONDS.

few inches below the water level to above the water level they are faced with stone to represent an ideal section of the geology of this region. The placement of the stone was done under the supervision of Dr. Ray S. Bassler, Head Curator, Department of Geology, National Museum. The entire area, which is much larger than the old waterfowl yard, is enclosed by a low fence. This is one of the most attractive additions to the Park in many years; it will accommodate a far greater number and variety of waterfowl than it has ever been possible before to exhibit, and in addition it is so situated that it will be seen by practically all persons visiting the Zoo.

Cement curbing to the extent of 9,000 linear feet was constructed along the roadsides. This is a preliminary to what is hoped will eventually result in a general improvement of the roads within the Zoo grounds. New walks laid totaled 2,050 square feet. This includes a walk and steps up the lion house hill. About 3,000 square yards of roads and walks were repaired.

An enclosure was constructed between the bears and the road on a site that was for many years unattractive although it was in a very conspicuous location. This will be suitable for medium-sized animals. It is also of the barless-moat type of construction on the front.

At the end of the fiscal year there is practically completed an enclosure on the south side of the reptile house that will accommodate such animals as lizards, snakes, crocodilians, and turtles. This is provided with a pool; a moat keeps the animals in their enclosure but offers no obstruction to the view of the public.

Extensive plantings were made on areas that had been or were being newly developed. These plantings consisted mainly of trees that either produce nuts or fruits suitable for the wildlife of the Park or are ornamental or shade trees. Also many flowering or other ornamental shrubs and evergreens were planted.

Work was begun in March 1940 on a new restaurant to be constructed by the P. W. A. under an allotment of $90,000. The restaurant building, of the Virginia tavern type of stone construction, is situated in a grove of trees across the road from the lion house, commanding a beautiful view of the new waterfowl ponds. The building will probably be completed by the end of September 1940.

NEEDS OF THE ZOO

The chief need of the Zoo at the present time is for proper buildings in which to exhibit:

1. *Antelopes, tropical deer, wild hogs, kangaroos.*—The present building is dilapidated and unsightly, a fire hazard, and a menace to the health of animals.

2. *Monkeys.*—The Zoo has an exceedingly fine collection of monkeys, both in number and in kind, which are very poorly exhibited in the antiquated building which at present houses them.

3. *Carnivores.*—Either the present building should be entirely reconstructed, utilizing the one wing that is well built and replacing the old frame wing—a firetrap and not suitable for the housing or exhibition of these animals—or, much better, an entirely new and modern building should be erected.

When the W. P. A. is again available, there are a number of projects that should be carried out, including the replacing of old and dilapidated paddocks and shelters with new and modern ones.

It has been planned also to build a monkey island and a large outdoor cage for tigers.

The increase in utilization of the Park together with the increased structures and increase in area to be cared for has far outgrown the capacity of the existing personnel to care for it. It is, therefore, important, if the grounds and buildings are to be kept in a presentable condition, that the personnel be increased by at least 10 men. The rigid enforcement of the prohibition against W. P. A. workers doing any work of a maintenance character leaves no alternative other than to increase the personnel or allow the Park to be unsightly.

VISITORS FOR THE YEAR

A record of the attendance shows a slight decrease compared with last year.

July	258,600	February	103,300
August	200,200	March	173,800
September	264,300	April	179,200
October	154,300	May	258,600
November	130,700	June	216,100
December	140,500		
January	50,000	Total	2,129,600

The attendance of organizations, mainly classes of students, of which there is definite record, was 33,602, from 628 different schools in 21 States and the District of Columbia as follows:

State	Number of persons	Number of parties	State	Number of persons	Number of parties
Alabama	50	1	New Jersey	2,161	27
Connecticut	146	3	New York	1,228	25
Delaware	222	4	North Carolina	1,010	30
District of Columbia	6,706	123	Ohio	685	18
Florida	40	1	Pennsylvania	6,293	116
Georgia	431	13	Rhode Island	70	1
Indiana	37	1	South Carolina	549	16
Maine	172	5	Tennessee	130	3
Maryland	5,580	86	Virginia	5,855	117
Massachusetts	672	17	West Virginia	1,327	16
Michigan	152	4			
New Hampshire	86	1	Total	33,602	628

About 3 o'clock every afternoon, except Sundays and holidays, a census is made of the cars parked on the Zoo grounds. During the year, 27,840 were so listed, representing every State in the Union, Alaska, Canada, Canal Zone, Cuba, Hawaii, Puerto Rico, and the Philippine Islands.

Since the total number is merely a record of those actually parked at one time, it is not of value as indicating a total attendance but is of importance as showing the percentage of attendance by States, Territories, and countries. The record for the year on this basis shows that the District of Columbia automobiles comprised slightly less than 46 percent; Maryland, 20 percent; Virginia, 10 percent; and the remaining cars were from other States, Territories, and countries. On a few occasions when it has been possible to make a census of the cars that were parked in the Zoo grounds at a given hour on Saturday afternoons, Sundays, and holidays, it has been found that District cars comprise only about 30 percent and cars from the several States and other parts of the world make the remaining 70 percent. Owing to the large attendance on these days, the proportion for the year of District and foreign cars would be very materially altered from that obtained when Saturdays, Sundays, and holidays are omitted from the count. It is, therefore, clearly evident that at least 60 percent of the cars that come to the Zoo throughout the year are from outside the District.

An accurate count of the total traffic through the Park would be desirable, and with that in mind a request has been made to the D. C. Works Progress Administration for such a project.

ACCESSIONS

FIELD WORK

SMITHSONIAN-FIRESTONE EXPEDITION

Through funds donated to the Smithsonian Institution by the Firestone Tire & Rubber Co., of Akron, Ohio, a party was sent to Liberia, West Africa, for the purpose of collecting specimens for the National Zoological Park. The party, consisting of the Director, Mrs. Mann, Ralph Norris, and Roy J. Jennier, sailed on the American-West African Line on February 17, 1940, for Monrovia. Here they were received by Mr. George Seybold, manager of the Firestone Plantations Co., and taken immediately to the plantation, where they established headquarters.

Trips into the interior were made at four localities: Belleyella, near the French Ivory Coast frontier; the Gibi country; the Polish Plantation at Reputa; and Bendaja in the Gola country, inland from Cape Mount and near the British Sierra Leone border. The party also visited the American Episcopal Missions at Bromley and Cape Mount

and were given cordial hospitality by Bishop Leopold Kroll and Miss Mary Wood McKenzie.

Much aid and hospitality were given by Mr. Seybold. He also spent some time at Cape Palmas and brought back a number of interesting specimens which he gave to the expedition. B. O. Vipond, Director of Personnel, was of great assistance as were various other plantation employees. P. C. Bodewes, with the aid of his native boys, made several drives for animals; Mr. Lewis Chancellor, well-known hunter, personally collected several duikers and water chevrotains. Mr. and Mrs. George Blowers, of the Bank of Monrovia, presented their household pets, a red duiker, a civet cat, and a linsang. To all of these the expedition is under deep obligation.

The other specimens were collected almost entirely by natives in various parts of the country, and many were brought back by the party on its field trips.

In addition to the live animals a considerable collection of alcoholic specimens was made, including fishes, reptiles, batrachians, and insects. All preserved specimens collected on this expedition are being turned over to the United States National Museum.

At the close of the fiscal year the expedition was still in the field, although a preliminary shipment had been made from Liberia to Boston in the care of Roy J. Jennier, who arrived at that port on May 17, 1940. A summary of the specimens in this shipment follows:

Class	*Species*	*Individuals*
Mammals	5	13
Birds	8	15
Reptiles	11	53
Mollusks	1	14
Total	25	95

Some of these animals were placed on display in the exhibition of the Firestone Tire & Rubber Co. at the New York World's Fair, upon the close of which they will be forwarded to Washington. The remainder were brought direct to Washington.

The other members of the expedition sailed from Monrovia on July 15, 1940, and arrived at Norfolk, Va., August 6 with about 100 specimens including 2 pigmy hippopotami, dwarf civets, crested monkey-eating eagles, the rare Liberian ratel, and other little-known species. A list of the live animals which arrived in Boston on May 17, follows:

SMITHSONIAN-FIRESTONE EXPEDITION

Scientific name	*Common name*	*Number*
Python sebae	African rock python	2
Amyda triunguis	West African soft-shelled turtle	1
Kinixys erosa	West African hinged tortoise	25
Naja sp	Cobra	4
Varanus niloticus	African monitor	5

SMITHSONIAN-FIRESTONE EXPEDITION—continued

Scientific name	*Common name*	*Number*
Bitis nasicornis	Rhinoceros viper	8
Bitis gabonica	Gaboon viper	3
Osteolaemus tetraspis	Broad-nosed crocodile	1
Atheris chlorechis	West African tree viper	1
Pelusios derbianus	Turtle	3
Atilax pluto	West African water civet	2
Perodicticus potto	Potto	1
Cricetomys gambianus	Gambia pouched rat	4
Pan satyrus	Chimpanzee	2
Cercocebus fuliginosus	Sooty mangabey	4
Stephanoaetus coronatus	Crowned hawk eagle	1
Kaupifalco monogrammicus	Northern lizard-buzzard	2
Astur tachiro macroscelides	West African goshawk	1
Milvus migrans parasitus	African yellow-billed kite	1
Tympanistria tympanistria fraseri	Tambourine dove	6
Columba guinea	Triangular spotted pigeon	1
Streptopelia semitorquata	African red-eyed dove	2
Ceratogymna elata	Yellow-casqued horn bill	1
Achatina achatina	Giant land snail	14

SOUTHERN ASIATIC EXPEDITION

On July 8, 1939, Malcolm Davis returned from Calcutta, India, where he had gone to bring back the first Indian rhinoceros that this institution had ever had. This was collected for the Park by the Government of Assam, British India, through the interested offices of the United States Consul General, Dr. J. C. White. It arrived in Washington in perfect condition and may be considered one of the "stars" of the collection. Mr. Davis took with him a few North American animals which were turned over to zoos in the East; in return he received a number of interesting specimens. In Calcutta he was given friendly assistance by Sir David Ezra, the noted bird fancier. A complete list of the specimens obtained on this trip follows:

SOUTHERN ASIATIC EXPEDITION

Scientific name	*Common name*	*Number*
Rhinoceros unicornis	Great Indian one-horned rhinoceros	1
Macaca sinica	Toque or bonnet monkey	3
Macaca mulatta	Golden rhesus	2
Presbytis entellus pallipes	Ceylon gray langur	4
Presbytis senex nestor	Western purple-faced monkey	2
Ratufa macroura dandolena	Grizzled giant squirrel	2
Felis chaus	Jungle cat	1
Viverricula indica rasse	Small civet	1
Alectoris graeca	Chukar partridge	12
Gallus lafayetti	Ceylonese jungle fowl	2

SOUTHERN ASIATIC EXPEDITION—continued

Scientific name	*Common name*	*Number*
Threskiornis melanocephala	Black-headed ibis	4
Streptopelia chinensis ceylonensis	Ash dove	12
Munia maja	White-headed munia	3
Munia punctulatus	Rice bird or nutmeg finch	2
Munia molucca	Black-throated munia	10
Diardigallus diardi	Siamese fireback pheasant	1
Anthropoides virgo	Demoiselle crane	6
Gavialis gangeticus	Indian gavial	3
Crocodilus palustris	"Toad" crocodile	2
Varanus salvator	Monitor lizard	1
Testudo elegans	Star tortoise	6
Naja naia	Common cobra	4
Trimeresurus trigonocephalus	Green pit viper	2
Vipera russelli	Russell's viper	2
Dendrophis bifrenalis	Green tree snake	4
Dryophis mycterizans	Asiatic whip snake	8
Ptyas mucosus	Indian rat snake	4
Kachuga tectum	Spotted-bellied tortoise	7
Trionyx punctata punctata	Asiatic soft-shelled turtle	3
Geoclemys hamiltoni	Small spotted turtle	1
Morenia ocellata	Turtle	10
Python molurus	Indian python	6

ANTARCTIC AND SOUTH AMERICAN EXPEDITION

At the invitation of the United States Antarctic Exploration Service to send a representative from the Zoo, Malcolm Davis, Principal Keeper of the National Zoological Park, sailed from Boston on the M. S. *North Star* November 11, 1939, with Admiral Byrd and other members of the exploration party that was going to the Antarctic to establish bases on that continent. Mr. Davis assisted in the unloading of the ship at the West Base and obtained some specimens including an emperor penguin, which was shipped from Valparaiso, Chile, and arrived in Washington March 5, 1940, having been brought through the Tropics in the cold-storage room of a passenger vessel.

Other specimens were left at Valparaiso while Mr. Davis remained aboard the *North Star*, which went back to establish the East Base. Here additional specimens were obtained, and Mr. Davis finally sailed from Valparaiso on the Grace Line vessel *Santa Maria*, which arrived at New York April 25, 1940. He brought with him a crab-eating seal, probably the first to be brought north of the Equator, and a group of Adelie penguins. These penguins, together with the emperor penguin, were kept in the glass-fronted cold room in the bird house, where they enjoyed a temperature of 56°. However, crushed ice was also put into the cage, and it was interesting to note that the Adelie penguins would stand for hours on the crushed ice in a temperature of 56°.

Additional specimens were obtained at Valparaiso and other points along the west coast of South America. A complete list of those brought to Washington follows:

ANTARCTIC AND SOUTH AMERICAN EXPEDITION

Scientific name	*Common name*	*Number*
Aptenodytes forsteri	Emperor penguin	1
Pygoscelis adeliae	Adelie penguin	13
Caiman sp	Caiman	1
Parabuteo unicinctus	Hawk	1
Notiopsar curaeus	Chilean blackbird	16
Phrygilus fruticeti	Mourning finch	6
Phrygilus gayi	Gay's gray-headed finch	8
Sicalis luteola	Misto finch	8
Spinus uropygialis	Chilean siskin	11
Diuca diuca	Diuca finch	20
Zonotrichia capensis	Chingolo	6
Trupialis miliaris	Military starling	8
Gallus sp	Araucanian fowl	4
Turdus rufiventris	Argentine robin	2
Molothrus sp	Cowbird	1
Zenaida auriculata	South American mourning dove	15
Cerchneis sparverius cinnamominus	Chilean sparrow hawk	2
Milvago chimango	Chimango	1
Belanopterus chilensis	Chilean lapwing	2
Paroaria cucullata	Brazilian cardinal	9
Cyanocorax mystacalis	Moustached jay	1
Polos flavus	Kinkajou	3
Cebus capucinus	White-throated capuchin	1
Felis glaucula	Margay	1
Sula sp	Booby	1
Lobodon carcinophaga	Crab-eating seal	1
Marmosa elegans	Murine opossum	1
Felis concolor puma	Patagonian puma	1
Dusicyon sp	South American fox	1

GIFTS

The receipt of specimens as gifts continues to be a main source of supply to the collection. Acknowledgment is made in a complete list of donors and their gifts. Among interesting additions were a pair of black bears from the Pennsylvania Game Commission, obtained through Carl La Barre, of Portland, Pa. Richard Archbold, American Museum of Natural History, New York, N. Y., presented three Finsches' tree kangaroos. A splendid pair of yak was received from the Department of Mines and Resources, Dominion of Canada, through Hoyes Lloyd. From Carlo Zeimet, Washington, D. C., the Park received a group of pheasants including 1 chukar partridge, 7 silver pheasants, 4 golden pheasants, and 12 golden and Lady Amherst hybrids.

DONORS AND THEIR GIFTS

Mrs. R. Adams, Washington, D. C., opossum.
Ross Allen, Silver Springs, Fla., 7 Florida tree frogs, 37 southern green frogs.
Mrs. Maude Anderson, Washington, D. C., 2 mocking birds.
Richard Archbold, New York, N. Y., 3 Finsches' tree kangaroos.
Kenneth L. Avone, Washington, D. C., 2 white rabbits.
Mrs. Geo. D. Babcock, Washington, D. C., red-tailed hawk.
Mrs. Louise Ballif, Washington, D. C., pekin duck.
Stanley Barriger, Washington, D. C., 2 pekin ducks.
Chas. Baxter, Washington, D. C., nighthawk.
Carl Beale, Washington, D. C., 2 ring-necked pheasants, Formosan ring-necked pheasant, silver pheasant, kangaroo rat, 4 flying squirrels, sparrow hawk.
Dr. Lloyd M. Bertholf, Westminster, Md., 2 Bahama fresh-water turtles.
Jean Biron, Washington, D. C., pekin duck.
Mrs. W. D. Blair, Washington, D. C., weeping capuchin.
Mrs. S. S. Brandenburg, Rockville, Md., white-throated capuchin.
Allen E. Campbell, Washington, D. C., gray fox.
Mrs. B. R. Campbell, Washington, D. C., sparrow hawk.
Canadian Government, Department of Mines and Resources, Wainwright, Alberta, 2 yaks.
Dorothy Carpenter, Washington, D. C., opossum, skunk.
O. H. Clarke, Washington, D. C., coot.
Mrs. C. E. Clift, Washington, D. C., pekin duck.
J. C. Coe, Arlington, Va., 25 prairie rattlesnakes.
Mr. Coffey, Washington, D. C., red-bellied terrapin.
H. James Cole, Bethesda, Md., 9 spotted salamanders, 2 snapping turtles, 5 box turtles, musk turtle, frog, marbled salamander, common newt, painted turtle.
Louis Conradic, Washington, D. C., American ovenbird.
Albert Crampton, Sharpsburg, Md., red-shouldered hawk.
Mrs. L. Cummons, Washington, D. C., Cuban parrot.
Billie Currie, Washington, D. C., sparrow hawk.
Harry Day, Hyattsville, Md., box turtle.
Dessez's Service Station, Washington, D. C., alligator.
Antonio Di Guistino, Washington, D. C., woodchuck or ground hog.
Sergt. A. S. Douglas, No. 10 Police Precinct, Washington D. C., alligator.
Chas. E. Eaton, Chevy Chase, Md., opossum.
Herbert N. Eaton, Chevy Chase, Md., white and black rat.
Barbara Eckhardt, Washington, D. C., 2 zebra finches.
S. C. Elmore, Alexandria, Va., pekin duck.
Mrs. Belle Evans, Washington, D. C., double yellow-head parrot, flying squirrel.
Sir David Ezra, Calcutta, India, 3 Indian gavials, 12 chukar partridges, 2 golden rhesus monkeys, 2 Ceylon gray langurs, 1 Siamese fireback pheasant, 6 demoiselle cranes, 7 spotted-bellied tortoises, 3 Asiatic soft-shelled turtles, and 1 small spotted turtle.
W. H. Floyd, Arlington, Va., 2 American crows.
P. P. Foster, Bennings, D. C., Cooper's hawk.
Jas. M. Fowler, Washington, D. C., red fox.
Jos. S. France, Washington, D. C., box turtle.
O. M. Freeman, Washington, D. C., water snake.
Mrs. H. L. Freet, Washington, D. C., yellow-naped parrot.
Mrs. Wm. R. Fuchs, Washington, D. C., alligator.

Mrs. Chas. Funk, Washington, D. C., alligator.
Harry E. Gates, Washington, D. C., 2 pekin ducks, diamond-backed terrapin.
Jos. Gaillard, Washington, D. C., sparrow hawk.
Ralph Garett, Henrietta, Texas, 3 horned lizards.
W. C. Giffen, Washington, D. C., white-throated capuchin.
David Gillis, Washington, D. C., red bat.
Richard B. Goetz, Waldorf, Md., 2 red-shouldered hawks.
Marshall Gooding, Kensington, Md., red fox.
Mrs. F. C. Goodwin, Washington, D. C., barred owl.
W. Bart Greenwood, Washington, D. C., jack rabbit, Great Basin pocket mouse, 2 black-eared mice.
Edgar H. Grimes, Washington D. C., 4 tropical fishes.
Curtis G. Guckert, Four Mile Run, Va., American barn owl.
Mrs. B. Hansch, Washington, D. C., raccoon.
R. A. Heindl, Washington, D. C., woodcock.
R. L. Higginbothan, Washington, D. C., 12 tropical fishes.
Chas. Hinton, Washington, D. C., raccoon, toulous goose.
Mr. and Mrs. Gerard Hubbard, Silver Spring, Md., 3 eastern porcupines.
Miss Raye Hudson, Arlington, Va., 4 guinea pigs.
John Bowler Hull, Washington, D. C., 2 screech owls.
Curtis Insley, Cambridge, Md., golden eagle.
Mrs. E. J. Johnson, Washington, D. C., woodchuck or ground hog.
Eunice Johnson, Washington, D. C., grass paroquet.
Mrs. W. Jones, Washington, D. C., 3 cottontail rabbits.
June M. Kern, Washington D. C., screech owl.
Mrs. K. K. Kirkland, Washington, D. C., screech owl.
R. M. Kisner, Washington, D. C., opossum.
Harry Knapman, Silver Spring, Md., red fox.
Vinton K. Lewis, Fairfax, Md., horseshoe crab.
O. M. Locke, New Braunfels, Tex., nine-banded armadillo.
H. A. MacCord, Washington, D. C., large brown bat.
J. M. Marshall, Bluemont, Va., mocking bird.
Edith Martin, Washington, D. C., banded rattlesnake.
Mrs. R. Mays, Washington, D. C., American crow.
Mr. McCullen, Bradbury Heights, Md., alligator.
Mrs. J. C. Meikel, Washington, D. C., 4 grass paroquets.
G. F. Miller, Washington, D. C., yellow-billed cuckoo.
Mrs. W. Miller, Washington, D. C., alligator.
Mrs. Moore, Washington, D. C., 2 mallard ducks.
Mrs. Geo. Murnau, Washington, D. C., white rabbit.
Mrs. R. J. Murphy, Washington, D. C., grass paroquet.
Anthony Muto, Washington, D. C., troupial.
National Institute of Health, through Dr. A. Pachchanian, Washington, D. C., 2 long-tailed mice, 2 northern white-footed mice, 2 Gambel's white-footed mice (albinos), 2 old field mice.
Frank Noell, Washington, D. C., white rabbit.
Mrs. R. Oberst, Washington, D. C., woodchuck or ground hog.
Wm. Orsinger, Washington, D. C., hog-nosed snake.
Parks Department, Charleston, S. C., through A. H. Von Kolnitz, 2 wild turkeys.
T. Patson, Washington, D. C., opossum.
Pennsylvania Game Commission, 2 black bears.
A. R. Peters, Bethesda, Md., pekin duck.
T. A. Petras, Quantico, Va., brown capuchin.

Alan V. Philips, Chattanooga, Tenn., fence lizard.
Chas. Pureus, Washington, D. C., pekin duck.
Capt. W. A. Riedal, U. S. N., Washington, D. C., 2 troupials.
Herman Riegal, Valparaiso, Chile, murine opossum, hawk.
Lowry Riggs, Rockville, Md., 2 jungle fowl.
H. Rinke, Arlington, Va., bald eagle.
S. S. Roberts, Washington, D. C., opossum.
President Franklin D. Roosevelt, The White House, 2 ring-necked doves.
Bernard Rosser, Washington, D. C., 2 alligators.
F. Sanders, Evansville, Ind., rhesus monkey.
Miss Virginia W. Sargent, Washington, D. C., turtle dove.
Miss Viola S. Schantz, Washington, D. C., large brown bat.
Jesse P. Schell, Frederick, Md., red fox.
G. M. Schmidt, Frederick Md., red-tailed hawk, barred owl.
Ralph Scott, Washington, D. C., 4 banded rattlesnakes, opossum, 2 black snakes, snapping turtle.
Mrs. W. L. Seibold, Washington, D. C., screech owl.
Mrs. E. E. Sheppard, Washington, D. C., 2 Alaskan frogs.
Shipping Room, W. Bldg., Bureau of Standards, Washington, D. C., weasel.
C. L. Sibley, Wallingford, Conn., 2 melanistic mutant ring-necked pheasants, 2 green Japanese pheasants.
Elsie Simmons, Washington, D. C., alligator.
W. P. Smith, Annapolis, Md., red fox.
Mrs. Stacy, Washington, D. C., alligator.
J. N. Stebbins, Washington, D. C., mourning dove.
Orren Stein, Washington, D. C., 2 pekin ducks.
Mrs. Stovall, Westmoreland Hills, Md., American crow.
Paul Sulcer, Frederick, Md., 8 skunks.
Mrs. W. W. Swaggard, Washington, D. C., yellow-naped parrot.
J. Swanick, Arlington, Va., 2 mallard ducks.
Clifton Taylor, Bladensburg, Md., 2 garter snakes, snapping turtle.
Jack Terry, Washington, D. C., copperhead.
Benny Thomas, Bennings, D. C., Cooper's hawk.
Douglas Tittpoe, Washington, D. C., American crow.
Fred A. Tweed, Jr., Washington, D. C., 5 white rabbits.
U. S. Antarctic Service, emperor penguin, 13 Adelie penguins, crab-eating seal.
U. S. Biological Survey, through Don Spencer, Washington, D. C., 2 meadow mice, 1 jumping mouse, 4 red-backed mice, and 10 pine mice. Through F. C. Lincoln, Washington, D. C., red-shouldered hawk, hybrid duck. Through W. H. Marshall, Boise, Idaho, western porcupine.
Virginia Upton, Lanham, Md., muscovy duck.
Miss Edith Ward, Washington, D. C., ring-necked pheasant, melanistic mutant ring-necked pheasant.
J. W. Warner, Washington, D. C., American crow.
Mrs. C. F. Welch, Washington, D. C., cockatiel.
Dr. A. Wetmore, Washington, D. C., albino purple grackle.
H. G. Wilson, Washington, D. C., American barn owl.
Wilson Teachers College, Washington, D. C., opossum.
Marlene Withone, Washington, D. C., black rabbit.
Norman Yates, Compton, Md., albino opossum.
Carlo Zeimet, Washington, D. C., chukar partridge, 7 silver pheasants, 4 golden pheasants, 12 golden and Lady Amherst hybrid pheasants.

BIRTHS

There were 55 mammals born, 28 birds hatched, and 22 reptiles born or hatched during the year.

MAMMALS

Scientific name	*Common name*	*Number*
Ammotragus lervia	Aoudad	4
Axis axis	Axis deer	1
Bibos gaurus	Gaur	1
Bison bison	American bison	5
Bos indicus	Zebu	1
Camelus bactrianus	Bactrian camel	1
Canis lupus nubilus	Plains wolf	3
Canis rufus	Texas red wolf	4
Cervus elaphus	European red deer	1
Choeropsis liberiensis	Pigmy hippopotamus	1
Dama dama	Fallow deer	3
Dolichotis magellanica	Patagonian cavy	4
Felis onca	Jaguar	2
Felis tigris	Bengal tiger	2
Lama glama	Llama	2
Macaca nemistrina	Pig-tailed macaque	1
Magus maurus	Moor monkey	1
Myocastor coypu	Coypu	5
Nasua narica	Coatimundi	5
Petaurus breviceps	Lesser flying phalanger	6
Pseudois nahura	Bharal or blue sheep	1
Taurotragus oryx	Eland	1

BIRDS

Larus novaehollandiae	Silver gull	14
Nycticorax nycticorax naevius	Black-crowned night heron	10
Spheniscus demersus	Jackass penguin	4

REPTILES

Constrictor constrictor	Common boa	10
Cyclagras gigas	Cobra de Paraguay	12

EXCHANGES

A most interesting lot of Asiatic mammals, birds, and reptiles were received from the Zoological Gardens, Colombo, Ceylon. These were brought to the Park by Malcolm Davis of the Zoo staff, along with an Indian rhinoceros, the return of which was the specific reason for his journey to India. The group of animals from Colombo consisted of 7 monkeys of 3 different species, 33 birds of 5 species, and 33 reptiles of 9 different species. An important exchange was made with Louis Ruhe, Inc., New York, N. Y., in which the Park received a splendid pair of bactrian camels. A young has since been born to this pair. Several exchanges have been carried on

with Ennio Arrigutti, Buenos Aires, Argentina, in which the Zoo received a number of desirable South American reptiles. This exchange has been made possible through the cooperation of A. Bienenwald, a member of the crew of the S. S. *Brazil*, who cared for the animals en route. A number of interesting specimens of reptiles that occur in the western part of the United States have been received from C. W. Kern, Tujunga, Calif. A list of the specimens acquired by exchange follows:

EXCHANGES

Scientific name	*Common name*	*Number*
Salamandra salamandra	Fire salamander	25
Hydromantes genei	Salamander	15
Molge vulgaris	European newt	15
	Gray newt	10
Corvus cornix	Hooded crow	4
Vulpes fulva	Red fox	1
Acrochordus javanicus	Elephant-trunk snake	1
Python bivittata	Indian python	1
Gecko gecko	Gecko	9
Camelus bactrianus	Bactrian camel	2
Bombina bombina	Fire-bellied toads	20
Ara macao	Red, yellow, and blue macaw	1
Ceratophrys ornata	Horned frog	4
Hydromedusa tectifera	Snake-necked turtle	6
Liolaemus weigmanni	Lizards	4
Acryllium vulturinum	Vulturine guinea fowl	2
Liophis anomalus	South American brown and yellow striped snake	4
Liophis miliaris	South American brown snake	2
Leimadophis poecilogyrus	South American green snake	1
Phrynops hilarii	Turtle	1
Pseudemys d'orbigni	D'Orbigni's turtle	3
Phyllorhynchus decurtatus perkinsi	Leaf-nosed snake	1
Pituophis catenifer annectens	Western bull snake	2
Lampropeltis getulus boylii	Boyle's king snake	1
Crotalus ruber	Red rattlesnake	1
Crotalus viridis oreganus	Pacific rattlesnake	1
Crotalus cerastes	Sidewinder rattlesnake	2
Arizona elegans occidentalis	Western glossy snake	1
Salvadora grahamiae virgultea	Chaparral patch-nosed snake	1
Sceloporus orcuttii	Orcutt's swift	2
Dipsosaurus dorsalis	Desert iguana	1
Gerrhonotus imbricatus	Plated lizard	2
Phrynosoma blainvillii	California horned lizard	1
Heterodon contortrix	Hog-nosed snake	3
Thamnophis sirtalis	Garter snake	1
Masticophis flagellum	Coachwhip snake	1
Natrix sp	Water snake	1
Clemmys insculpta	Wood tortoise	4
Neotoma floridana	Round-tailed wood rat	5
Pavo cristatus	White peafowl	1
Anserinas semipalmata	Australian pied goose	2

PURCHASES

One of the most important purchases for some time was a Great Indian one-horned rhinoceros obtained from the Forest Department, Government of Assam, India. This was received through the cooperation of United States Consul General J. C. White, Calcutta, India. Other specimens acquired by purchase were four black swans, two Flinders Island wombats, and a South American bush dog. An important lot of South American animals were purchased by Malcolm Davis on the west coast of South America. These were mainly obtained through the kindness and cooperation of Dr. Edwyn P. Reed, of Valparaiso, Chile. A list of the purchases follows:

PURCHASES

Scientific name	*Common name*	*Number*
Pipa americana	Surinam toad	6
Chenopis atrata	Black swan	4
Vombatula ursinus	Flinders Island wombat	2
Pithecia monacha	Saki monkey	2
Callicebus cuprea	Beautiful cebus	1
Aotus trivirgatus	Douroucouli or owl monkey	5
Puntius partipentazona	Red-finned barb	10
Pantodon buchholzi	Butterfly fish	4
Monocirrhus polyacanthus	Leaf fish	4
Tapirus terrestris	South American tapir	1
Icticyon venaticus	Bush dog	1
Epimachus fastuosus	Sickle-billed bird of paradise	1
Parotia sefilata	Six-plumed bird of paradise	1
Acrocodia indica	Asiatic tapir	1
Charina bottae	Rubber boa	1
Calyptocephalus gayi	Gay's frog	8
Micrurus fulvius	Coral snake	1

REMOVALS

DEATHS

Major losses during the year included an emperor penguin, crab-eating seal, Siberian tiger, bush dog, Kodiak brown bear, Kidder's brown bear, and a young chimpanzee. As in the past, all specimens of scientific value that died during the year were sent to the National Museum.

ANIMALS IN COLLECTION THAT HAD NOT PREVIOUSLY BEEN EXHIBITED

MAMMALS

Scientific name	*Common name*
Atilax pluto	West African water civet.
Callicebus cuprea	Red titi monkey.
Dendrolagus inustus finschi	Finsches' tree kangaroo.
Felis chaus	Jungle cat.
Lobodon carcinophaga	Crab-eating seal.
Rhinoceros unicornis	Great Indian one-horned rhinoceros.
Viverricula indica rasse	Small civet.

BIRDS

Aptenodytes forsteri	Emperor penguin.
Epimachus fastuosus	Sickle-billed bird of paradise.
Kaupifalco monogrammicus	Northern lizard-buzzard.
Parabuteo unicinctus	South American hawk.
Pygoscelis adeliae	Adelie penguin.
Tympanistria tympanistria fraseri	Tambourine dove.

REPTILES

Charina bottae	Rubber boa.
Gavialis gangeticus	Indian gavial.
Kachuga tectum	Spotted-bellied tortoise.
Kinixys erosa	West African hinged tortoise.
Liophis anomelis	South American ground snake.
Liophis miliaris	Do.

Statement of Accessions

How acquired	Mammals	Birds	Reptiles	Amphibians	Fishes	Mollusks	Crustaceans	Total
Presented	95	110	119	59	16		1	400
Born	55	28	22					105
Received in exchange	9	9	60	89				167
Purchased	13	6	2	14	18			53
On deposit	16	4	1					21
Received from Smithsonian Institution-Firestone Expedition to Liberia	13	15	53			14		95
Received from Antarctic Expedition	1	14						15
Brought from South America by returning Antarctic Expedition	9	121	1					131
Received from National Zoological Park Expedition to India	16	52	63					131
Totals	227	359	321	162	34	14	1	1,118

Summary

Animals on hand July 1, 1939	2,450
Accessions during the year	1,118
Total animals in collection during year	3,568
Removal from collection by death, exchange, and return of animals on deposit	1,018
In collection June 30, 1940	2,550

Status of Collection

Class	Species	Individuals	Class	Species	Individuals
Mammals	233	704	Insects	1	25
Birds	329	1,071	Mollusks	1	11
Reptiles	148	537	Crustaceans	1	5
Amphibians	26	125			
Fishes	21	67	Total	762	2,550
Arachnids	2	5			

Respectfully submitted.

W. M. Mann, *Director.*

Dr. C. G. Abbot,
Secretary, Smithsonian Institution.

APPENDIX 8

REPORT ON THE ASTROPHYSICAL OBSERVATORY

SIR: I have the honor to submit the following report on the activities of the Astrophysical Observatory for the fiscal year ended June 30, 1940:

These operations are conducted on funds received in part from the appropriation by Congress, amounting for the fiscal year 1940 to $32,070, and in part from private sources. The latter included parts of the income from the Hodgins and the Arthur funds, and grants for specified objects from John A. Roebling. These private sources contributed altogether $19,000 during the fiscal year.

At Washington, the work is carried on in two old frame buildings south of the Smithsonian Building. There are three mountain stations located in New Mexico, California, and Chile. At these stations, chosen for low winds, high altitude, and extreme cloudlessness, without much regard for living conditions, the principal apparatus is housed within a horizontal tunnel to secure fairly constant temperature conditions. Small dwellings, computing rooms, and garages complete the establishments, which are designed to accommodate only a field director, one assistant, and their families. During the fiscal year a reinforced cement block dwelling has been under erection at the station at Montezuma, Chile, but is not yet fully completed, so that the incommodious frame dwelling there is still occupied.

WORK AT WASHINGTON

Messrs. Aldrich and Hoover, with a force of regular and special computers, some of whom were furnished by W. P. A., continued to work on the complete revision of all results on the solar constant of radiation from all stations and from 1923 to the present time. Many small inconsistencies revealed themselves between results of a single station in different years, and between the results of the different stations in the same year. Each of these inconsistencies was a problem in itself, requiring extensive study, and in some cases extensive remeasurements of photographic records. Consequently, progress was slow in preparing final tables of daily, decadal, and monthly mean values of the solar constant, based on the evidence of all observations. It had been hoped that these results would be ready to assemble and publish early in the calendar year 1940. But at the end of June there still remained several very troublesome questions to be resolved, so that several months more of study seemed indicated.

In the meantime Dr. Abbot has prepared text for volume 6 of the Annals of the Observatory as far as could be done until these revised results were available for discussion. It is believed that when the tables are ready the manuscript can be put in press within 2 months thereafter. Funds for its publication have already been generously furnished by John A. Roebling. The text will explain and illustrate with painstaking fullness the details of the research, and the results will be given with greater completeness than ever before. It may be partially understood what this involves when it is said that the table of daily values of the solar constant is estimated to occupy 144 quarto pages, with three groups of 14 columns each, on every page.

Increasing interest among scientists in these solar-constant studies is apparent. In last year's report attention was called to critical studies of the work published in England. Dr. Abbot's reply, also published there, led to mathematical investigations undertaken at Harvard College Observatory and at the Massachusetts Institute of Technology. Two of these statistical studies have been published by Dr. Theodore E. Sterne, of Harvard. They tend to confirm the reality of periodicities in solar variation, and yield periods for the most part agreeing in length, within the limits of error, with those found by Dr. Abbot and published by him several years ago.[1]

The interest thus aroused led Dr. Shapley, Director of Harvard College Observatory, to invite Dr. Abbot to give six lectures there in May 1940, on the following subjects:

1. Exact measurements of solar radiation.
2. Solar radiation and the atmosphere.
3. The variation of the sun.
4. Weather governed by solar variation.
5. Utilizing solar radiation.
6. Radiation and plant growth.

Serious and sympathetic attention was given to these lectures by the staff of Harvard Observatory and by representatives from the Massachusetts Institute of Technology, the Blue Hill Meteorological Observatory, and elsewhere. After the fourth lecture Dr. Abbot was invited by Dr. Brooks, Director of the Blue Hill Observatory, to publish a summary of the first four lectures relating to meteorology in the Bulletin of the American Meteorological Society. This publication is going forward.

In September 1939 there was held in Washington a Congress of the International Geophysical Union. Among the delegates was the eminent meteorologist, Dr. H. Arctowski, of Poland. His country was conquered and his property lost while the Congress was in session. Later, John A. Roebling provided funds for retaining Dr.

[1] Abbot, C. G., Solar radiation and weather studies. Smithsonian Misc. Coll., vol. 94, No. 10, 1935.

Arctowski on the staff of the Observatory for 1 year, from December 1, 1939. Dr. Arctowski was asked to investigate the relations between solar variation and the weather. At that time he doubted the reality of solar variation as indicated by our observations. But within 2 weeks after beginning his studies, Dr. Arctowski became thoroughly convinced of the reality of solar variation, and that it is the major factor in weather. He has announced these findings in two papers.[2] He is continuing his researches in this field with consuming zeal. It is hoped to retain him another year after the completion of his present engagement.

With the assistance of Miss N. M. McCandlish, special computer under a grant from John A. Roebling, Dr. Abbot has endeavored to evaluate the separate influences produced on weather by the long-range solar periodicities which are referred to above. For this research monthly departures from normal temperature and rainfall for numerous stations in America and other regions were used. It soon appeared that the solar periodicities produce considerable weather changes. But for periodicities of less than 25 months' length, and occasionally for longer ones, shifting of phases in the weather responses took place from time to time. It occurred to Dr. Abbot that these shifts very probably are due to seasonal influences. That is, a solar cause operating in winter might reasonably produce a different phase in its weather effects than the same cause operating in summer. Inasmuch as the solar periodicities are not commensurable with 12 months, their phases of course shift through the seasons. On testing this hypothesis it was found to be sustained by data from many meteorological stations.

It was then recognized that these phase effects might be eliminated by taking into account least common multiples of the several periods as compared individually to 12 months. For instance, an 8-month periodicity returns each 24 months in the same season of the year. Other periodicities recur in the same season at longer intervals. Acting upon this basis we computed the average weather effects over a century or more for 8 solar periodicities ranging in length from 8 months to 68 months in length. Among the stations used were Copenhagen, Vienna, and New Haven, all beginning with the year 1800. It was very encouraging to find that, with the phase taken care of, as explained above, all of these stations agreed in indicating pronounced effects of solar variation, and that there is no indication that a change of phase has occurred in the solar periodicities for over a century. In such long series the solar influences were repeated many

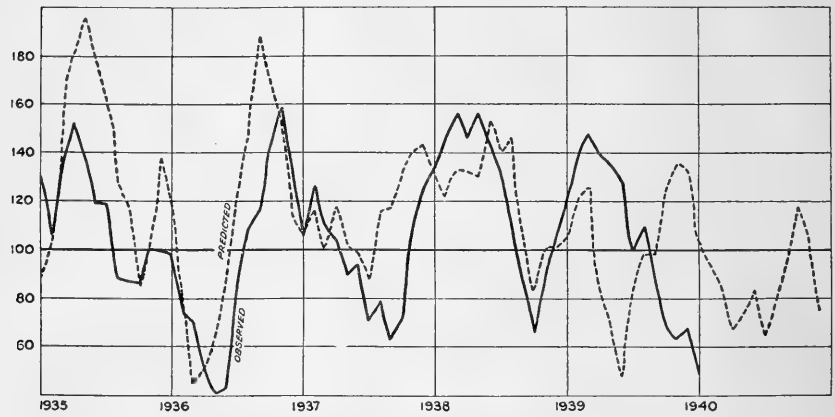
[2] Solar faculae and solar constant variations. Proc. Nat. Acad. Sci., vol. 26, No. 6, pp. 406–411, June 1940.

Researches on temperature changes from day to day and solar constant variations. Bull. Amer. Meteor. Soc., vol. 21, p. 257–261, June 1940.

times in the same phase. It was, therefore, possible to obtain from the meteorological records more accurate determinations of the solar periodicities than could be obtained from our solar-constant work of the past 20 years. The three stations mentioned agreed perfectly as to these determinations. In this way we have established the following corrected values for solar periodicities expressed in months.

8.12; 9.79; 11.29; 21.0; 25.3; 39.5; 45¼

It now became of importance to see whether the average results in departures from normal temperatures and precipitation, corresponding to these corrected periods, could be used synthetically as a means of long-range prediction for the future. In order to investigate this interesting possibility, it was clear that if the courses of the meteorological periodicities used should be determined from records all ante-



PERCENTAGE OF NORMAL PRECIPITATION AT PEORIA, ILLINOIS.
FIVE-MONTH RUNNING MEAN VALUES.

FIGURE 1.

dating 1935, for instance, then it would be honest to regard a synthetic assembly of them, covering the years 1935 to 1940, as a true 5-year prediction, which could be fairly compared with the event. This procedure was undertaken for numerous stations, and for both temperature and precipitation. The resulting forecasts were not all equally successful. But in all cases there was a marked correlation between the forecast and the event. The agreement turned out to be quite as likely to be good in 1940 as in 1935. As an illustration of very good correspondence, though in this instance failing somewhat in 1939, the 5-year forecast and event for the precipitation at Peoria, Ill., is given here. In this case a correlation coefficient of 70 ± 5 percent is found between prediction and event for 58 months. It is hoped that further study may improve the 5-year synthetic forecasts generally. At present they average satisfactory in two-thirds of the months.

WORK IN THE FIELD

As far as weather permitted, daily observations of the solar constant of radiation were continued at three stations: Tyrone, N. Mex., Table Mountain, Calif., and Montezuma, Chile. Criticism having been made again from foreign sources regarding the temperature coefficient of the silver-disk pyrheliometer, numerous redeterminations of this quantity were made at Tyrone and Table Mountain. Owing to a misapprehension of directions, no less than 120 redeterminations were made at Tyrone by Messrs. Moore and Froiland. Their mean is identical with that found previously by Abbot and Aldrich at Washington, and by Zodtner and Greeley at Table Mountain, and is almost identical with that found this year by Butler and Greeley at Table Mountain. Over 200 determinations have now been made, giving as their mean the same temperature correction which has been used for nearly 30 years with silver-disk pyrheliometers. There can now be no further question of altering it.

PERSONNEL

No changes in personnel have taken place since my last report, except that L. A. Fillmen, for 10 years instrument maker under private compensation in the Division of Radiation and Organisms, has been appointed instrument maker under the public funds at the Astrophysical Observatory, succeeding A. Kramer, retired.

Respectfully submitted.

C. G. Abbot, *Director.*

The Secretary,
Smithsonian Institution.

APPENDIX 9

REPORT ON THE DIVISION OF RADIATION AND ORGANISMS

SIR: I have the honor to submit the following report on the activities of the Division of Radiation and Organisms during the year ended June 30, 1940:

As in previous years the Division has been in part supported by a grant from the Research Corporation of New York.

During the past year the Division has continued its active work on problems of photosynthesis and factors affecting plant growth, both from a nutritional and radiation point of view. Dr. McAlister, with the assistance of Dr. Myers, has continued his induction-period studies of photosynthesis with the very valuable addition of simultaneous records of fluorescent intensities. Drs. Johnston and Weintraub have further improved their apparatus and technique in carrying out their investigation of respiration, photosynthesis, and chlorophyll formation as affected by light.

Mrs. Chase has extended her work on the stimulative action of ultraviolet on algae. Dr. Weintraub has completed the initial phases of some of his growth studies and opened up others to be investigated. Mr. Clark has undertaken the construction of an improved and simplified apparatus of his own designing for the accurate and rapid determination of minute amounts of carbon dioxide.

As an outgrowth of the induction-period studies, Dr. Myers is further investigating the relation of the induction behavior of *Chlorella* to the previous condition of culture. In addition, he is planning a comparative study of various methods for the measurement of photosynthesis and of the photosynthetic behavior of various kinds of plants. Mr. Clark and Mr. Fillmen have given valuable assistance in the designing and construction of apparatus. The division library has been improved greatly through the kindness of Mr. Corbin, the Institution's librarian. One hundred and fifteen volumes of periodicals have been bound, and other material has been made more accessible.

PHOTOSYNTHESIS, RESPIRATION, AND CHLOROPHYLL FORMATION

A great many simultaneous measurements of the rate of carbon dioxide uptake and the intensity of fluorescence have been made during the induction period of photosynthesis. The rapid spectro-

graphic method of carbon dioxide measurements previously used has been adapted to a constant-flow technique with a rapid time response. The intensity of fluorescence was measured with a filter-photocell combination.

Experiments so far carried out under a wide range of conditions may be described in terms of two processes. In one, an inverse relationship appears to exist between the rate of carbon dioxide uptake and the intensity of fluorescence. In the other, there is a direct relationship. The inverse relationship is illustrated by the behavior of wheat seedlings in low oxygen concentration when suddenly exposed to high light intensity. In this case the fluorescence curve shows an abrupt initial rise, a slower secondary rise, and a decay toward the steady state. The simultaneously observed rate of carbon dioxide uptake follows a course inversely related to fluorescence. Thus, when the intensity of fluorescence or rate of carbon dioxide uptake are plotted against time, the two curves are almost perfect mirror images (as to time). For wheat in normal oxygen concentration, the mirror-image relationship is less perfect, and a direct relationship seems to be superimposed.

The dependence of the direct relationship on oxygen and the observation of a greater rate of carbon dioxide uptake in low oxygen suggests that this process involves a photoxidation. In the alga *Chlorella pyrenoidosa* the induction behavior is greatly influenced by the previous conditions of culture. Cells grown in 4 percent carbon dioxide show a response comparable to that of wheat. When the cells are acclimated to air of 0.03 percent carbon dioxide the photoxidation type of response predominates.

Further and more quantitative work is being undertaken along this line, for it is felt that fluorescence in these experiments is a useful tool in the study of the mechanism of photosynthesis.

Preparatory to other experiments on photosynthesis, respiration and chlorophyll studies have been continued with the recording spectrographic carbon dioxide apparatus. Attention was especially directed to detecting any difference in respiration of etiolated barley seedlings that might occur in a change from darkness to light of low intensities. As has been pointed out in other reports, this information is essential in the measurement of photosynthesis as determined by gaseous exchange. Repetition of these experiments indicated a slight increase in the rate of respiration when the plants were illuminated. However, the rates of respiration were different on successive periods so that it was necessary to look for possible sources of error. It was found that etiolated seedlings placed in the growth chamber connected with the carbon dioxide measuring apparatus did not become green in a normal manner. The amount of chlorophyll formed was 20 to 30 percent lower than in a control chamber not connected with the ap-

paratus. The difficulty was traced to a minute amount of mercury vapor entering the growth chamber from the mercury seal of the air-circulating pump.

The problem then resolved itself into one of obtaining a properly designed circulating pump for the carbon dioxide measuring apparatus. In a closed system of this type it is necessary to circulate the air in a system absolutely leakproof to carbon dioxide. Even the slightest amount, a few cubic millimeters, would introduce an error that would invalidate the measurements made by this method.

A metal bellows-type pump was constructed and installed. This worked fairly well but carried with it certain disadvantages. A third type of pump making use of a rotating magnetic field was next tried, but was discarded because of its lack of power. A fourth pump was constructed and, from the few preliminary experiments so far tried, it is believed that it will meet the rigid requirements of this exacting experimentation.

A series of experiments on etiolated barley seedlings clearly shows that there is enough chlorophyll formed in 1½ hours' exposure to light of about 100 foot-candles to be easily measured.

The instrumental phases and the perfecting of experimental technique have now been completed to the point where work on the problems relating to the genesis of chlorophyll and the beginning of photosynthesis may be carried on in greater detail.

PLANT GROWTH INVESTIGATIONS

PLANT HORMONES AND CHEMICAL FACTORS

A standardized technique has been worked out for the extraction of growth substances from the oat seedling and, in a comparative study of the various methods employed by other investigators, has been found to possess a number of advantages. It is becoming more generally appreciated among the workers in this field that the problem of growth substance assay is greatly complicated by the possible existence of hormone precursors, of active and inactive forms of the growth substance itself, and of growth inhibitors. A complete understanding of the behavior of the plant must take all these factors into account and further work is now being done along these lines.

In the study of the growth of excised oat shoots and leaves a number of biochemical substances, several of which have been made available through the generosity of Merck & Co., as well as various plant extracts, have been tested. As yet it has not been possible to develop an artificial environment which will enable the excised organs to develop in an entirely normal manner, but some interesting interrelationships among the various parts of the plant have come to light. These studies are being continued.

RADIATION EFFECTS

The initial phase of the study of the spectral sensitivity of the oat mesocotyl has now been completed. The general finding, which is expected to be published shortly, is that this organ shows its maximum light sensitivity in the red region of the spectrum and decreased response at shorter or longer wave lengths. This is especially interesting since it is very different from the spectral sensitivity of the contiguous organ of the oat seedling, the coleoptile, as demonstrated in growth and phototropism. The diversity of behavior raises several problems with respect to the mechanism of the light effect which are now being investigated. One of these concerns the nature of the photoreceptive pigment involved. It has been possible to demonstrate the presence, in dark-grown oat seedlings, of a pigment which appears to have the requisite absorption spectrum. Its spectral properties correspond with those recorded in the literature for protochlorophyll. However, because of the incomplete and contradictory nature of the data in the literature, it seems desirable to undertake an extensive investigation of the whole protochlorophyll problem.

A further result of the study is that the magnitude of the light effect is proportional to the logarithm of the light intensity. This fact suggests the possibility that more than one photochemical reaction is involved. It is hoped to pursue this problem also.

Experiments on the stimulation effects of ultraviolet radiation on the multiplication of cells of the green alga *Stichococcus bacillaris* Naeg. have been continued during the past year. Four seccessive exposures of the algal cells were made to stimulative amounts of each of the wavelengths 2352, 2483, and 2652 A. After each exposure the growth rate (expressed as number of cells) increased until at the conclusion of the fourth exposure it was 4 to 4.8 times that of the control cultures. Cells irradiated with the optimum stimulative exposure of 2967 A. increased at a rate of 1.5 to 1.6 times the control in the first exposure; but after the second exposure the rate of muliplication of cells was similar to that of the controls. The stimulated cells diminished in length with each successive exposure. They increased slightly in width after the first two exposures, then decreased with the next two exposures so that after the fourth and final exposure, the cells were less wide than those of the controls. Numerous disintegrated cells were present in the cultures that had been exposed three and four times when they were examined 2 to 3 months after the final exposure, whereas the cells exposed only twice appeared to be a darker green and more healthy than the controls. The sum of the three optimum dosages given to the algae was twice that of the lethal quantity.

Cultures of stimulated algae when exposed to lethal intensities of the full ultraviolet spectrum proved to be less sensitive to the lethal amounts than were the control cells. Even those cultures that had been stimulated by four successive exposures and which contained numerous disintegrated cells were less sensitive to the lethal amounts than were the control cells.

A detailed account of this research will be published under the title "Increased Stimulation of the Alga *Stichococcus bacillaris* by Successive Exposures to Short Wave Lengths of the Ultraviolet."

PERSONNEL

Dr. Jack E. Myers was granted a National Research Fellowship to carry on his research in photosynthesis in the Division's laboratory. This fellowship, which began September 19, 1939, has been renewed for a second year.

L. A. Fillmen, by an executive order, was appointed to the civil service on May 20, 1940, and transferred to the staff of the Astrophysical Observatory as instrument maker.

PAPERS PRESENTED AT MEETINGS

Cultivation of excised oat leaves. Presented by Robert L. Weintraub before the American Society of Plant Physiologists, Columbus, Ohio, December 28, 1939.

Induction and related phenomena. Presented by E. D. McAlister at the symposium on photosynthesis, Section C (Chemistry) of the American Association for the Advancement of Science, Columbus, Ohio, December 28, 1939.

Plant tissue cultures. Presented by Robert L. Weintraub before the Botanical Society of Washington, D. C., March 5, 1940.

Sensitivity of plants with special reference to light. Presented by Earl S. Johnston before the Gamma Alpha Scientific Fraternity, The Johns Hopkins University, Baltimore, Md., April 5, 1940.

Time course of photosynthesis and fluorescence. Presented by E. D. McAlister before the Physiological Colloquium, Washington, D. C., June 10, 1940.

PUBLICATIONS

Johnston, Earl S., and Weintraub, Robert L. The determination of small amounts of chlorophyll—apparatus and method. Smithsonian Misc. Coll., vol. 98, No. 19, pp. 1–5, 1939.

Meier, Florence E. Stimulative effect of short wave lengths of the ultraviolet on the alga *Stichococcus bacillaris*. Smithsonian Misc. Coll., vol 98, No. 23, pp. 1–19, 1939.

Johnston, Earl S. Sunlight and plant life. Scientific Monthly, vol. 50, June, pp. 513–525, 1940.

Respectfully submitted.

Earl S. Johnston, *Assistant Director.*

Dr. C. G. Abbot,
Secretary, Smithsonian Institution.

APPENDIX 10

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, 1940:

THE LIBRARY

The library—or, more correctly, the library system—has come into being, unit by unit, as the interests and needs of the Smithsonian have developed. The main unit, dating from 1846, the year of the establishment of the Institution, was transferred in 1866 to the Library of Congress, where, as the Smithsonian Deposit, it has since grown steadily by frequent sendings from the library of the Institution. It is notable for the completeness of its collections of scientific and technological publications, especially those of learned institutions and societies. Other important units of the system are the libraries of the United States National Museum and the Bureau of American Ethnology; still others are those of the Astrophysical Observatory, Freer Gallery of Art, National Collection of Fine Arts, National Zoological Park, Division of Radiation and Organisms, the Langley Aeronautical Library, and the Smithsonian Office Library. The system also includes the 35 sectional libraries of the National Museum, which are the immediate working tools of the curators and their assistants.

PERSONNEL

The staff remained, for the most part, unchanged. Miss Marie Ruth Wenger, library assistant, was promoted to the grade of junior librarian. The assistant messenger, Roland O. J. Caraccio, resigned in June. Many of the W. P. A. employees of the year before, with a few others more recently added, were assigned to the library until the close of the Smithsonian project in April. Their service was highly appreciated.

EXCHANGE OF PUBLICATIONS

The exchange work of the library was, of course, seriously interfered with by the abnormal economic and political conditions in several parts of the world. As the year advanced, it became increasingly difficult to carry on the customary exchange of publications with societies and institutions abroad. In not a few cases, foreign

publications were issued less frequently than usual, suspended for the time being, or discontinued altogether. In most instances, those that came at all were very late in arriving. Some even were lost in transit. This irregularity and uncertainty put the library to its extreme effort to obtain, before it was too late, all the publications it could of those needed in the work of the Institution. In this it was only moderately successful. The packages it received through the International Exchange Service, for example, numbered 1,329—fewer by 865 than those received the previous year. There was also a falling off—of more than 2,000—in the packages that came by mail. This decrease is ominous, for while it may be possible, in various ways, after the wars are over and conditions become more normal, to fill many of the gaps in the foreign series, probably some will remain unfilled.

Most of the large sendings were received early in the year, while world conditions were still fairly stable. They were from the Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte, Berlin; Yenching University, Peiping; Reale Società Geografica Italiana, Rome; Biblioteca Nazionale Centrale di Firenze, Florence; International Institute of Intellectual Cooperation, Paris; Academia Română, Bucharest; Royal Society of Queensland, Brisbane; Royal Society of New South Wales, Sydney; Manx Museum, Douglas; G. W. R. Swindon Engineering Society, Swindon; Pan-Pacific Union, Honolulu; Pomona College, Claremont; and Florida Entomological Society, Gainesville. These sendings were for the Smithsonian Deposit and the libraries of the National Museum and Freer Gallery of Art.

There was, as would be expected, even a worse falling off in the dissertations received, especially from foreign institutions. There were only 1,608 of these, as against 5,190 the year before. They came from the universities of Basel, Berlin, Bern, California, Freiburg, Giessen, Greifswald, Louvain, Lund, Lwow, Lyon, Neuchâtel, Pennsylvania, Strasbourg, and Warsaw, and the technical schools of Braunschweig, Delft, Dresden, Karlsruhe, and Zürich. Of the dissertations, 788 were assigned to the Smithsonian Deposit, and the others, on account of their subject matter, to the library of the Surgeon General.

The staff wrote 2,502 letters, most of which had to do with the library's exchange work—an increase of 212 over the previous year. There was also an increase of 57 in the number of new exchanges arranged for and of 157 in the number of want cards handled, in connection with the special effort of the staff to satisfy the needs of the Smithsonian libraries, either by exchanging publications or by drawing liberally on the large collection of duplicates lately made available at the Institution. The number of publications thus obtained

was 7,546, or 1,789 more than in 1939. It should be made clear, however, that a great many of these items were taken from the surplus stock mentioned above and were used by the libraries, particularly the Smithsonian Deposit and the library of the National Museum, in building up second or reserve sets. Other libraries of the system, especially those of the Astrophysical Observatory, National Collection of Fine Arts, Radiation and Organisms, and National Zoological Park, also benefited generously from this activity of the staff. It is expected that the libraries will benefit even more richly in the year to come from the thousands of publications that will be offered to them from the same surplus collection.

In the interest of the exchange work, too, it may be noted that during the past fiscal year many publications of the Institution and its bureaus were returned to the library from various colleges, museums, and public libraries throughout the country, and from at least one institution abroad; namely, the Bibliothèque Centrale du Muséum National d'Histoire Naturelle, Paris. These publications, which were no longer needed by the institutions that sent them back, were welcomed by the library as they added substantially to the supply of material available for exchange. They also, in a number of instances, brought to the sets in the libraries of the Institution items long out of print and lacking. And, finally, they made it possible for the library to respond favorably to dozens of requests on its waiting list of needs in other libraries. In this clearing-house activity, as well as in the main exchange work of the year, the library had the cooperation of the offices of publications, and—so far as it was free to function, under the restrictions imposed by the unsettled world conditions—of the International Exchange Service. Among the libraries sharing most generously in this noteworthy enterprise were those of the Department of Agriculture, National Geographic Society, American Bible Society, Marine Biological Laboratory, Woods Hole, Public Museum of the Staten Island Institute of Arts and Sciences, South Dakota State Historical Society, Departamento de Botanica do Estado, São Paulo, Brazil, and the following colleges and universities: Brown, Columbia, Duke, Harvard, Massachusetts Institute of Technology, Mount Holyoke, New York, North Carolina, Oberlin, Pennsylvania, Princeton, Rochester, Vanderbilt, Virginia, William and Mary, and Yale.

GIFTS

The gifts of the year were many. They included 897 publications from the American Association for the Advancement of Science; 653 from the Geophysical Laboratory of the Carnegie Institution of Washington; 252 from the American Association of Museums; 216, chiefly on ethnology and archeology, from James

Townsend Russell, Jr.; 100, relating mainly to the natural history of Brazil, from Ernest G. Holt; 23, on airplane engines of various makes, from John E. Rae; and a large number, on miscellaneous subjects, from the Honorable Usher L. Burdick, Member of Congress from North Dakota. Other generous gifts came from members and associates of the Smithsonian staff, notably Secretary Abbot, Assistant Secretary Wetmore, and Mrs. Charles D. Walcott. Among the publications presented by Mrs. Walcott was a highly prized set, in 23 volumes, attractively bound and lettered, of the scientific and other papers, both published and unpublished, of her husband, the late fourth Secretary of the Smithsonian Institution. This will be given a place of honor in the library alongside of similar collected works by Secretaries Henry, Baird, and Langley.

Of the other gifts, only a few, chosen from the large number, can be mentioned here, such as 7 books by Vilhjalmur Stefansson—Hunters of the Great North, The Northward Course of Empire, My Life with the Eskimo, Adventures in Error, My Life with the Eskimos, Unsolved Mysteries of the Arctic, and Iceland the First American Republic—from the author; 5 copies of The Museum in America, in 3 volumes, by Laurence Vail Coleman, from the author, as Director of the American Association of Museums; Chinese Jade Carvings of the Sixteenth to the Nineteenth Century in the Collection of Mrs. Georg Vetlesen, in 3 volumes, compiled by Stanley Charles Nott, from Mrs. Georg Vetlesen; Portraits of Shipmasters and Merchants in the Peabody Museum of Salem, and New England Blockaded in 1814 (the Journal of Henry Edward Napier, Lieutenant in H. M. S *Nymphe*)—both edited by Walter Muir Whitehill—from the Peabody Museum; Voyages of the *Valero III*, by De Witt Meredith, from Captain G. Allan Hancock; O. C. Marsh, Pioneer in Paleontology, by Charles Schuchert and Clara Mae Le Vene, from the authors; Les Beaux Arts et les Arts Decoratifs, in 2 volumes, by M. Louis Gonse, from Dr. William Schaus; The Macrolepidoptera of the World, by Adalbert Seitz, from Mrs. Wirt Robinson, the widow of the late Colonel Robinson, Professor of Chemistry at West Point, who, it will be recalled, was a friend and benefactor of the National Museum; Moss Flora of North America North of Mexico, volume I, part 4, by A. J. Grout, from the author; Communications, volume 10, of the Institut de Géophysique et de Météorologie de L'Université de Lwów, by Dr. Henryk Arctowski, from the author; A Bibliography of Scientific Papers on Climatic Variations, compiled by Dr. Henryk Arctowski, from the Union Géographique Internationale—Commission of Climatic Variations; Science and Social Ethics, by Sir Richard Arman Gregory, from The Friedenwald Foundation; Mouth Infections and

Their Relation to Systemic Diseases—A Review of the Literature, in 2 volumes, by Dr. Malcolm Graeme MacNevin and Dr. Harold Stearns Vaughan, from the authors; Australia, 1788–1938—Historical Review, from the Hon. B. S. B. Stevens, Premier of New South Wales; and Voyage Zoologique d'Henri Gadeau de Kerville en Asie-Mineure (Avril–Mai 1912), Tome Premier, Première Partie (12 copies), from Henri Gadeau de Kerville.

STATISTICS

The accessions to the library system, then, were several thousand fewer than usual. They were as follows:

Library	Volumes	Pamphlets and charts	Total	Approximate holdings June 30, 1940
Astrophysical Observatory	71	95	166	9,845
Bureau of American Ethnology	364	-------	364	[1] 52,762
Freer Gallery of Art	230	94	324	15,761
Langley Aeronautical	33	22	55	3,498
National Collection of Fine Arts	327	198	525	7,292
National Museum	1,867	938	2,805	216,839
National Zoological Park	26	38	64	3,846
Radiation and Organisms	89	2	91	527
Smithsonian Deposit, Library of Congress	1,955	1,214	3,169	566,554
Smithsonian office	129	17	146	50,892
Total	5,091	2,618	[2] 7,709	[2] 907,816

[1] This number includes about 20,000 pamphlets.
[2] From both the accessions for the year and the total holdings are omitted many publications waiting to be completed, bound, or cataloged.

The staff made 26,422 periodical entries; cataloged 6,105 volumes, pamphlets, and charts; prepared and filed 42,388 catalog and shelf-list cards; and loaned 11,745 publications to members of the Institution and its branches. They carried on an extensive interlibrary loan service with more than 50 libraries in Washington and outside, including several in Mexico and Cuba: an undertaking that involved the writing of many letters and the handling—without a single loss, it may be added—of 2,832 publications. They responded to an unusually large number of inquiries for bibliographical and other information, some of which required hours of research, often at the Library of Congress. They also contributed 635 cards to the index of Smithsonian publications, bringing it practically up to date, and a few to the index of exchange relations. Finally, they advanced the union catalog as follows:

Volumes cataloged	3,523
Pamphlets and charts cataloged	2,203
New serial entries made	379
Typed cards added to catalog and shelf list	6,253
Library of Congress cards added to catalog and shelf list	16,504

SOME OTHER ACTIVITIES

Mention has just been made of two indexes that are in preparation. A third was undertaken late in the year—a card index of the explorations with which the Smithsonian or one of its bureaus has at any time been connected. Both the scientists and the library staff have frequently felt the need of such a file—and to the future historian it will, of course, be of great value. For it will make instantly available the essential facts pertaining to each expedition—for example, dates, places, personnel, scientific results, with exact references to published accounts—taken part in by the Institution since 1846.

Another important piece of work was checking the records for periodical holdings in various libraries of the system, in the interest of the second edition of the Union List of Serials now being prepared.

Still another special task—one that required considerable time on the part of two or three members of the staff, as well as of several W. P. A. employees—was the transfer and rearrangement of the publications that had for years been shelved along the sides of the main hall of the Smithsonian Building, to cases set up in the alcoves at the ends of the hall. In their new locations the most consulted of these collections are more accessible than they were before.

Again, the staff sorted by subject about 3,000 reprints and separates and assigned them to the sectional libraries of the National Museum; added substantially to the card index of auction prices brought by works of art—a project begun the previous year for the library of the National Collection of Fine Arts; nearly completed the inventory of the technological library, with revision of the records as necessary; did further special cataloging for the botanical library; and made notable progress in the library of the Bureau of American Ethnology in eliminating material not pertinent to the work of the Bureau and in reclassifying and rearranging the remaining collections.

And, last but not least, by the joint effort of the staff and the W. P. A. workers the listing of the longer runs of duplicate serials in both the east and west stacks was well advanced. As fast as these lists were finished they were submitted to the libraries of the Institution that they might check the publications they needed. A few of those not wanted were sent to the library of the Department of Agriculture to fill gaps. And many were used in special exchange for other publications required in the work of the Smithsonian.

BINDING

Owing to lack of funds, it was possible to send to the Government bindery only a small proportion of the volumes waiting to be bound. The library of the National Museum sent 714; that of the Astrophysical

Observatory, 50. In addition, however, 241 volumes from several of the libraries, especially that of Radiation and Organisms, were bound by one of the W. P. A. assistants.

NEEDS

Nevertheless, the binding as a whole, already seriously in arrears, fell much farther behind during the year. This is most regrettable, as the plight of the thousands of volumes in question lessens the safety and usability of the serial files. Steps should be taken immediately to remedy this unfortunate condition.

There is great need, too, of more shelf room for the collections, particularly those in the natural history library of the National Museum. At least some temporary provision should be made without further delay for relieving the congestion there, even if no permanent means can be provided at present.

Finally, the staff should be considerably enlarged. Six trained assistants should be added to the regular force at the earliest possible moment. They are an assistant librarian, a junior librarian, a library assistant, a library aid, a messenger, and a typist. These are urgently needed, that the collections, both main and sectional, may be made more fully available and that the libraries of the Institution and its bureaus may, in general, serve more worthily the high purpose to which they are called.

Respectfully submitted.

WILLIAM L. CORBIN, *Librarian.*

Dr. C. G. ABBOT,
Secretary, Smithsonian Institution.

APPENDIX 11

REPORT ON PUBLICATIONS

SIR: I have the honor to submit the following report on the publications of the Smithsonian Institution and the Government branches under its administrative charge during the year ended June 30, 1940:

The Institution published during the year 16 papers in the series of Smithsonian Miscellaneous Collections, 1 annual report and pamphlet copies of 27 articles in the report appendix, and 1 special publication.

The United States National Museum issued 1 annual report, 27 separate Proceedings papers, 1 Bulletin, and 1 Contributions from the United States National Herbarium.

The Bureau of American Ethnology issued three bulletins.

Of the publications there were distributed 146,156 copies, which included 56 volumes and separates of the Smithsonian Contributions to Knowledge, 36,872 volumes and separates of the Smithsonian Miscellaneous Collections, 25,266 volumes and separates of the Smithsonian Annual Reports, 3,150 Smithsonian special publications, 65,961 volumes and separates of the National Museum publications, 13,984 publications of the Bureau of American Ethnology, 11 publications of the National Collection of Fine Arts (formerly the National Gallery of Art), 3 publications of the Freer Gallery of Art, 35 reports of the Harriman Alaska Expedition, 16 annals of the Astrophysical Observatory, and 714 reports of the American Historical Association.

SMITHSONIAN MISCELLANEOUS COLLECTIONS

There were issued 2 papers of volume 91, 8 papers and title page and table of contents of volume 98, 5 papers of volume 99, and volume 100 (whole volume), making 16 papers in all, as follows:

VOLUME 91

No. 30. A new cornucopina (Bryozoa) from the West Indies, by Raymond C. Osburn. 3 pp., 2 pls. (Publ. 3584.) March 14, 1940.

No. 31. A new genus and species of eel from the Puerto Rican Deep, by Earl D. Reid. 5 pp. (Publ. 3585.) March 11, 1940.

VOLUME 98

No. 18. Notes on Hillers' photographs of the Paiute and Ute Indians taken on the Powell expedition of 1873, by Julian H. Steward. 23 pp., 31 pls. (Publ. 3543.) July 21, 1939.

No. 19. The determination of small amounts of chlorophyll—apparatus and methods, by Earl S. Johnston and Robert L. Weintraub. 5 pp., 2 pls. (Publ. 3545.) July 31, 1939.

No. 20. The Helt Township (Indiana) meteorite, by Stuart H. Perry. 7 pp., 9 pls. (Publ. 3546.) August 28, 1939.

No. 21. The weekly period in Washington precipitation, by C. G. Abbot and N. M. McCandlish. 4 pp. (Publ. 3547.) July 27, 1939.

No. 22. Birds from Clipperton Island collected on the Presidential Cruise of 1938, by Alexander Wetmore. 6 pp. (Publ. 3548.) August 11, 1939.

No. 23. Stimulative effect of short wave lengths of the ultraviolet on the alga *Stichococcus bacillaris*, by Florence E. Meier. 19 pp., 4 pls. (Publ. 3549.) September 26, 1939.

No. 24. The Ptarmigania strata of the northern Wasatch Mountains, by Charles Elmer Resser. 72 pp., 14 pls. (Publ. 3550.) October 26, 1939.

No. 25. List of the fishes taken on the Presidential Cruise of 1938, by Waldo L. Schmitt and Leonard P. Schultz. 10 pp. (Publ. 3551.) January 4, 1940.

VOLUME 99

No. 1. Sketches by Paul Kane in the Indian country, by David I. Bushnell, Jr. 25 pp., frontispiece. (Publ. 3553.) January 9, 1940.

No. 2. Geologic antiquity of the Lindenmeier site in Colorado, by Kirk Bryan and Louis L. Ray. 76 pp., 6 pls. (Publ. 3554.) February 5, 1940.

No. 3. Ritual ablation of front teeth in Siberia and America, by Aleš Hrdlička. 32 pp., 5 pls. (Publ. 3583.) March 4, 1940.

No. 4. A check-list of the fossil birds of North America, by Alexander Wetmore. 81 pp. (Publ. 3587.) June 18, 1940.

No. 5. The 11-year and 27-day solar periods in meteorology, by H. Helm Clayton. 20 pp. (Publ. 3589.) June 14, 1940.

VOLUME 100

Whole volume. Essays in historical anthropology of North America, published in honor of John R. Swanton in celebration of his fortieth year with the Smithsonian Institution. 600 pp., 16 pls. (Publ. 3588.) May 25, 1940.

The work of John R. Swanton, by A. L. Kroeber. Pp. 1–9.

Introduction, by Julian H. Steward. Pp. 11–13.

Some historical implications of physical anthropology in North America, by T. D. Stewart. Pp. 15–50.

Developments in the problem of the North American Paleo-Indian, by Frank H. H. Roberts, Jr. Pp. 51–116.

The historic method as applied to southeastern archeology, by M. W. Stirling. Pp. 117–123.

Virginia before Jamestown, by David I. Bushnell, Jr. Pp. 125–158, 2 pls.

Problems arising from the historic northeastern position of the Iroquois, by William N. Fenton. Pp. 159–251.

Archeological perspectives in the northern Mississippi Valley, by Frank M. Setzler. Pp. 253–290.

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Culture sequence in the central Great Plains, by Waldo R. Wedel. Pp. 291–352, 2 pls.

From history to prehistory in the northern Great Plains, by Wm. Duncan Strong. Pp. 353–394, 6 pls.

Some Navaho culture changes during two centuries (with a translation of the early eighteenth century Rabal Manuscript), by W. W. Hill. Pp. 395–415.

Progress in the Southwest, by Neil M. Judd. Pp. 417–444.

Native cultures of the Intermontane (Great Basin) area, by Julian H. Steward. Pp. 445–502.

Southern peripheral Athapaskawan origins, divisions, and migrations, by John P. Harrington. Pp. 503–532.

Outline of Eskimo prehistory, by Henry B. Collins, Jr. Pp. 533–592, 6 pls.

Bibliography of anthropological papers by John R. Swanton, compiled by Frances S. Nichols. Pp. 593–600.

SMITHSONIAN ANNUAL REPORTS

Report for 1938.—The complete volume of the Annual Report of the Board of Regents for 1938 was received from the Public Printer in December 1939.

Annual Report of the Board of Regents of the Smithsonian Institution showing the operations, expenditures, and condition of the Institution for the year ending June 30, 1938. xiii+608 pp., 115 pls., 71 figs. (Publ. 3491.)

The appendix contained the following papers:

New conception of the universe and of matter, by Gabriel Louis-Jaray.

The nature of the nebulae, by Edwin Hubble.

The sun and the atmosphere, by Harlan T. Stetson.

Cosmic radiation, by P. M. S. Blackett.

A world of change, by Edward R. Weidlein.

Transmutation of matter, by Lord Rutherford.

Science and the unobservable, by H. Dingle.

Some aspects of nuclear physics of possible interest in biological work, by L. A. DuBridge.

Electron theory, by R. G. Kloeffler.

Geology in national and everyday life, by George R. Mansfield.

The floor of the ocean, by P. G. H. Boswell.

Ice ages, by Sir George Simpson.

Soil erosion: The growth of the desert in Africa and elsewhere, by Sir Daniel Hall.

The future of paleontology, by Joseph A. Cushman.

The meteorology of great floods in the eastern United States, by Charles F. Brooks and Alfred H. Thiessen.

Eyes that shine at night, by Ernest P. Walker.

The Chinese mitten crab, by A. Panning.

The biology of light-production in arthropods, by N. S. Rustum Maluf.

The black widow spider, by Fred E. D'Amour, Frances E. Becker, and Walker van Riper.

The language of bees, by K. von Frisch.

Forest genetics, by Lloyd Austin.

The story of the maidenhair tree, by Sir Albert C. Seward.

The water-culture method for growing plants without soil, by D. R. Hoagland and D. I. Arnon.

"Root-pressure"—an unappreciated force in sap movement, by Philip R. White.

The reproduction of virus proteins, by W. M. Stanley.

Modern medicine—the crossroads of the social and the physical sciences, by Charles Austin Doan.

History and stratigraphy in the Valley of Mexico, by George C. Vaillant.

The Folsom problem in American archeology, by Frank H. H. Roberts, Jr.

The Roman Orient and the Far East, by C. G. Seligman.

An ancient Chinese capital: Earthworks at Old Ch'ang-an by Carl Whiting Bishop.

The natural limits to human flight, by H. E. Wimperis.

The historic American merchant marine, by Frank A. Taylor.

Report for 1939.—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 in January 1940.

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, 1939. ix+139 pp., 2 pls. (Publ. 3552.)

The report volume, containing the general appendix, was in press at the close of the year.

SPECIAL PUBLICATIONS

Explorations and field work of the Smithsonian Institution in 1939. 96 pp., 102 halftone figs. (Publ. 3586.)

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, 27 separate Proceedings papers from volumes 85, 86, 87, 88, and 89, 1 Bulletin, and 1 Contributions from the United States National Herbarium, as follows:

MUSEUM REPORT

Report on the progress and condition of the United States National Museum for the year ended June 30, 1939. iii+128 pp. January 1940.

PROCEEDINGS: VOLUME 85

Title page, table of contents, and index. Pp. i–x, 509–530. April 5, 1940.

VOLUME 86

No. 3065. Neotropical flies of the family Stratiomyidae in the United States National Museum, by Maurice T. James. Pp. 595–607, fig. 71. August 3, 1939.

VOLUME 87

No. 3066. Ceratopsian dinosaurs from the Two Medicine formation, Upper Cretaceous of Montana, by Charles W. Gilmore. Pp. 1–18, figs. 1–11. August 3, 1939.

No. 3067. Two new parasitic isopods from the eastern coast of North America, by A. S. Pearse and Henry A. Walker. Pp. 19–23, figs. 12, 13. August 1, 1939.

No. 3068. The Hederelloidea, a suborder of Paleozoic cyclostomatous Bryozoa, by Ray S. Bassler. Pp. 25–91, pls. 1–16, fig. 14. September 12, 1939.

No. 3069. A generic revision of the staphylinid beetles of the tribe Paederini, by Richard E. Blackwelder. Pp. 93–125. September 15, 1939.

No. 3070. New turritid mollusks from Florida, by Paul Bartsch and Harald A. Rehder. Pp. 127–138, pl. 17. September 15, 1939.

No. 3071. A new trematode from the loon, *Gavia immer*, and its relationship to *Haematatrephus fodiens* Linton, 1928, by W. Carl Gower. Pp. 139–143, fig. 15. September 1, 1939.

No. 3072. A study of LeConte's types of the beetles in the genus *Monoxia*, with descriptions of new species, by Doris Holmes Blake. Pp. 145–171, pls. 18, 19. October 5, 1939.

No. 3073. Observations on the birds of northern Venezuela, by Alexander Wetmore. Pp. 173–260. November 3, 1939.

No. 3074. A revision of the soapfishes of the genus *Rypticus*, by Leonard P. Schultz and Earl D. Reid. Pp. 261–270. October 24, 1939.

No. 3075. A taxonomic study of the neotropical beetles of the family Mordellidae, with descriptions of new species, by Eugene Ray. Pp. 271–314, figs. 16–19. December 15, 1939.

No. 3076. Catalog of human crania in the United States National Museum collections: Indians of the Gulf States, by Aleš Hrdlička. Pp. 315–464, fig. 20 May 18, 1940.

VOLUME 88

No. 3078. Trematodes from fishes mainly from the Woods Hole region, Massachusetts, by Edwin Linton. Pp. 1–172, pls. 1–26. May 16, 1940.

No. 3079. Report on certain groups of neuropteroid insects from Szechwan, China, by Nathan Banks. Pp. 173–220, pls. 27–30. April 13, 1940.

No. 3080. *Cestocrinus*, a new fossil inadunate crinoid genus, by Edwin Kirk. Pp. 221–224, pl. 31. March 14, 1940.

No. 3081. Notes on some pedunculate barnacles from the North Pacific, by Dora Priaulx Henry. Pp. 225–236, figs. 1–5. April 30, 1940.

No. 3082. Revision of the chalcid-flies of the tribe Chalcidini in America north of Mexico, by B. D. Burks. Pp. 237–354, figs. 6–14. June 11, 1940.

No. 3083. New genera and species of ichneumon-flies, with taxonomic notes, by R. A. Cushman. Pp. 355–372, figs. 15, 16. March 13, 1940.

No. 3084. The scolytid beetles of the genus *Renocis* Casey, with descriptions of nine new species, by M. W. Blackman. Pp. 373–401, figs. 17, 18. June 22, 1940.

No. 3085. Two new genera and three new species of cheilodipterid fishes, with notes on the other genera of the family, by Leonard P. Schultz. Pp. 403–423, figs. 19, 20. April 26, 1940.

No. 3086. A contribution to the knowledge of the Eucharidae (Hymenoptera: Chalcidoidea), by A. B. Gahan. Pp. 425–458. April 25, 1940.

No. 3087. A review of the parasitic Crustacea of the genus *Argulus* in the collections of the United States National Museum, by O. Lloyd Meehean. Pp. 459–522, figs. 21–47. June 22, 1940.

No. 3088. The ichneumon-flies of the subfamily Neorhacodinae, with descriptions of a new genus and three new species, by R. A. Cushman. Pp. 523–527, fig. 48. April 13, 1940.

No. 3089. Notes on the birds of Kentucky, by Alexander Wetmore. Pp. 529–574. April 23, 1940.

No. 3091. A prehistoric roulette from Wyandotte County, Kansas, by Waldo R. Wedel and Harry M. Trowbridge. Pp. 581–586, figs. 49, 50. June 5, 1940.

VOLUME 89

No. 3092. A revision of the West Indian beetles of the scarabaeid subfamily Aphodiinae, by Edward A. Chapin. Pp. 1–41. May 23, 1940.

BULLETINS

No. 175. Variations and relationships in the snakes of the genus *Pituophis*, by Olive Griffith Stull. vi+225 pp. June 26, 1940.

CONTRIBUTIONS FROM THE U. S. NATIONAL HERBARIUM: VOLUME 28

Part 3. Marine algae of the Smithsonian-Hartford Expedition to the West Indies, 1937, by William Randolph Taylor. Pp. i–iii, 549–562, pl. 20. June 12, 1940.

PUBLICATIONS OF THE BUREAU OF AMERICAN ETHNOLOGY

The editorial work of the Bureau has continued under the immediate direction of the editor, M. Helen Palmer. During the year three bulletins were issued as follows:

Bulletin 101. War ceremony and peace ceremony of the Osage Indians, by Francis La Flesche. vii + 280 pp., 13 pls., 1 fig.

Bulletin 124. Nootka and Quileute music, by Frances Densmore. xxvi + 358 pp., 24 pls., 7 figs.

Bulletin 125. Ethnography of the Fox Indians, by William Jones. Edited by Margaret Welpley Fisher. ix + 156 pp.

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 report for 1935, volume 2 (Writings on American History) and the report for 1938 (Proceedings) were issued during the year. The report for 1936, volume 2 (Writings on American History, 1936) and the report for 1937, volume 2 (Writings on American History, 1937–1938) were in press at the close of the year.

REPORT OF THE NATIONAL SOCIETY, DAUGHTERS OF THE AMERICAN REVOLUTION

The manuscript of the Forty-second Annual Report of the National Society, Daughters of the American Revolution, was transmitted to Congress, in accordance with law, December 11, 1939.

ALLOTMENTS FOR PRINTING

The congressional allotments for the printing of the Smithsonian Annual Reports to Congress and the various publications of the Government bureaus under the administration of the Institution were virtually used up at the close of the year. The appropriation for the coming year ending June 30, 1941, totals $73,000, allotted as follows:

Smithsonian Institution	$15,000
National Museum	30,250
Bureau of American Ethnology	11,150
National Collection of Fine Arts	400
International Exchanges	100
National Zoological Park	100
Astrophysical Observatory	400
American Historical Association	7,100
Total	64,500
Reserve	8,500
Grand total	73,000

Respectfully submitted.

W. P. True, *Chief, Editorial Division.*

Dr. C. G. Abbot,
Secretary, Smithsonian Institution.

REPORT OF THE EXECUTIVE COMMITTEE OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION

FOR THE YEAR ENDED JUNE 30, 1940

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 chiefly in the years prior to 1893, the income from which may be used for the general work of the Institution.

To these gifts has been added capital from savings on income, gain from sale of securities, etc., and they now stand on the books of the Institution as follows:

Avery, Robert S. and Lydia T., bequest fund	$51,794.10
Endowment fund, from gifts, income, etc	255,037.25
Habel, Dr. S., bequest fund	500.00
Hachenberg, George P. and Caroline, bequest fund	4,081.70
Hamilton, James, bequest fund	2,909.72
Henry, Caroline, bequest fund	1,227.52
Hodgkins, Thomas G., fund	146,675.45
Parent fund	728,879.04
Rhees, William Jones, bequest fund	1,070.15
Sanford, George H., memorial fund	2,003.51
Witherspoon, Thomas A., memorial fund	130,982.00
Special fund	1,400.00
Total endowment for general work of the Institution	1,326,560.44

The Institution holds also a number of endowment gifts and other funds, the income of each being restricted to specific use. These are invested and stand on the books of the Institution as follows:

Abbott, William L., fund, bequest to the Institution	$104,662.96
Arthur, James, fund, income for investigations and study of sun and lecture on the sun	40,592.03

Bacon, Virginia Purdy, fund, for a traveling scholarship to investigate fauna of countries other than the United States	50,850.81
Baird, Lucy H., fund, for creating a memorial to Secretary Baird	16,132.25
Barstow, Frederic D., fund, for purchase of animals for the Zoological Park	772.05
Canfield collection fund, for increase and care of the Canfield collection of minerals	38,819.63
Casey, Thomas L., fund, for maintenance of the Casey collection and promotion of researches relating to Coleoptera	9,309.42
Chamberlain, Francis Lea, fund, for increase and promotion of Isaac Lea collection of gems and mollusks	28,582.05
Hillyer, Virgil, fund, for increase and care of Virgil Hillyer collection of lighting objects	6,670.62
Hitchcock, Dr. Albert S., library fund, for care of Hitchcock Agrostological Library	1,344.95
Hodgkins fund, specific, for increase and diffusion of more exact knowledge in regard to nature and properties of atmospheric air	100,000.00
Hughes, Bruce, fund, to found Hughes alcove	17,418.53
Myer, Catherine Walden, fund, for purchase of first-class works of art for the use of, and benefit of, the National Gallery of Art	19,239.80
Pell, Cornelia Livingston, fund, for maintenance of Alfred Duane Pell collection	2,449.68
Poore, Lucy T. and George W., fund, for general use of the Institution when principal amounts to the sum of $250,000	78,317.79
Reid, Addison T., fund, for founding chair in biology in memory of Asher Tunis	30,270.38
Roebling fund, for care, improvement, and increase of Roebling collection of minerals	122,488.89
Rollins, Miriam and William, fund, for investigations in physics and chemistry	100,805.06
Smithsonian employees retirement fund	777.80
Springer, Frank, fund, for care, etc., of Springer collection and library	18,201.29
Walcott, Charles D. and Mary Vaux, research fund, for development of geological and paleontological studies and publishing results thereof	11,525.48
Younger, Helen Walcott, fund, held in trust	50,112.50
Zerbee, Francis Brinckle, fund, for endowment of aquaria	772.45
Special research fund, gift, in form of real estate	20,946.00
Total endowment for specific purposes other than Freer endowment	871,062.42

The above funds amount to a total of $2,197,622.86 and are carried in the following investment accounts of the Institution:

U. S. Treasury deposit account, drawing 6 percent interest	$1,000,000.00
Miscellaneous special funds	116,373.61
Consolidated investment fund (income in table following)	1,081,249.25
	2,197,622.86

CONSOLIDATED FUND

Statement of Principal and Income for the Last 10 Years

Fiscal year	Capital	Income	Percentage
1931	$668,069.02	$28,518.07	4.27
1932	712,156.86	26,142.21	3.67
1933	764,077.67	28,185.11	3.68
1934	754,570.84	26,650.32	3.66
1935	706,765.68	26,808.86	3.79
1936	723,795.46	26,836.61	3.71
1937	738,858.54	33,819.43	4.57
1938	867,528.50	34,679.64	4.00
1939	902,801.27	30,710.53	3.40
1940	1,081,249.25	38,673.29	3.47

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. From the above date to the present time these funds have been increased by stock dividends, savings of income, etc., to a total of $6,112,953.46. In view of the importance and special nature of the gift and the requirements of the testator in respect to it, all Freer funds are kept separate from the other funds of the Institution, and the accounting in respect to them is stated separately.

The invested funds of the Freer bequest are classified as follows:

Court and grounds fund	$684,798.42
Court and grounds maintenance fund	171,963.09
Curator fund	696,897.47
Residuary legacy	4,559,294.48
Total	[1] 6,112,953.46

SUMMARY

Invested endowment for general purposes	$1,326,560.44
Investment endowment for specific purposes other than Freer endowment	871,062.42
Total invested endowment other than Freer endowment	2,197,622.86
Freer invested endowment for specific purposes	6,112,953.46
Total invested endowment for all purposes	8,310,576.32

[1] The greater portion of gain in this capital over previous year is caused by placing on the books of the Institution the approximate market value of a large holding of stock heretofore held at a much lower figure.

CLASSIFICATION OF INVESTMENTS

Deposited in the U. S. Treasury at 6 percent per annum, as authorized in the United States Revised Statutes, sec. 5591		$1,000,000.00
Investments other than Freer endowment (cost or market value at date acquired):		
Bonds (30 different groups)	$539,844.99	
Stocks (41 different groups)	577,792.36	
Real estate and first-mortgage notes	71,661.11	
Uninvested capital	8,324.40	
		1,197,622.86
Total investments other than Freer endowment		2,197,622.86
Investments of Freer endowment (cost or market value at date acquired):		
Bonds (48 different groups)	$2,685,147.75	
Stocks (57 different groups)	3,410,858.25	
Real estate first-mortgage notes	9,000.00	
Uninvested capital	7,947.46	
		6,112,953.46
Total investments		8,310,576.32

CASH BALANCES, RECEIPTS, AND DISBURSEMENTS DURING THE FISCAL YEAR [2]

Cash balance on hand June 30, 1939		$313,097.74
Receipts:		
Cash income from various sources for general work of the Institution	$90,255.92	
Cash gift and contributions expendable for special scientific objects (not to be invested)	41,058.06	
Cash gifts for special scientific work (to be invested)	7.50	
Cash income from endowments for specific use other than Freer endowment and from miscellaneous sources (including refund of temporary advances)	79,627.88	
Cash received as royalties from Smithsonian Scientific Series	35,183.75	
Cash capital from sale, call of securities, etc. (to be reinvested)	126,797.78	
Total receipts other than Freer endowment		372,930.89
Cash income from Freer endowment	242,573.92	
Cash capital from sale, call of securities, etc. (to be reinvested)	1,311,672.25	
Total receipts from Freer endowment		1,554,246.17
Total		2,240,274.80

[2] This statement does not include Government appropriations under the administrative charge of the Institution.

Disbursements:		
From funds for general work of the Institution:		
Buildings—care, repairs, and alterations	3,118.37	
Furniture and fixtures	114.39	
General administration [3]	34,261.55	
Library	2,112.90	
Publications (comprising preparation, printing, and distribution)	18,574.05	
Researches and explorations	26,477.02	
		84,658.28
From funds for specific use, other than Freer endowment:		
Investments made from gifts, from gain from sale, etc., of securities and from savings on income	49,621.10	
Other expenditures, consisting largely of research work, travel, increase and care of special collections, etc., from income of endowment funds and from cash gifts for specific use (including temporary advances)	85,677.70	
Reinvestment of cash capital from sale, call of securities, etc.	100,160.14	
Cost of handling securities, fee of investment counsel, and accrued interest on bonds purchased	2,619.75	
		238,078.69
From Freer endowment:		
Operating expenses of the gallery, salaries, field expenses, etc.	45,755.98	
Purchase of art objects	155,214.33	
Investments made from gain from sale, etc., of securities	196,273.55	
Reinvestment of cash capital from sale, call of securities, etc.	1,104,247.02	
Cost of handling securities, fee of investment counsel, and accrued interest on bonds purchased including assessment for employees' retirement system	24,738.29	
		1,526,229.17
Cash balance June 30, 1940		391,308.66
Total		2,240,274.80

[3] This includes salary of the Secretary and certain others.

EXPENDITURES FOR RESEARCHES IN PURE SCIENCE, PUBLICATIONS, EXPLORATIONS, CARE, INCREASE, AND STUDY OF COLLECTIONS, ETC.

Expenditures from general funds of the Institution:		
Publications	$18,574.05	
Researches and explorations	26,477.02	
		$45,051.07
Expenditures from funds devoted to specific purposes:		
Researches and explorations	49,692.55	
Care, increase, and study of special collections	13,453.86	
Publications	3,469.12	
		66,615.53
Total		111,666.60

The practice of depositing on time in local trust companies and banks such revenues as may be spared temporarily has been continued during the past year, and interest on these deposits has amounted to $1,022.34.

The Institution gratefully acknowledges gifts or bequests from the following:

Friends of Dr. Albert S. Hitchcock, for establishment and care of the Hitchcock Agrostological Library.

Firestone Tire & Rubber Co., for expedition to Liberia for the collection of living wild animals.

Research Corporation, further contributions for research in radiation.

John A. Roebling, further contributions for research in radiation.

Mrs. Mary Vaux Walcott, for purchase of certain specimens.

Eleanor E. Witherspoon, for Thomas A. Witherspoon Memorial for the advancement of human knowledge.

All payments are made by check, signed by the Secretary of the Institution on the Treasurer of the United States, and all revenues are deposited to the credit of the same account. In many instances deposits are placed in bank for convenience of collection and later are withdrawn in round amounts and deposited in the Treasury.

The foregoing report relates only to the private funds of the Institution.

The following annual appropriations were made by Congress for the Government bureaus under the administrative charge of the Smithsonian Institution for the fiscal year 1940:

General Expenses	$356,620.00
(This combines under one heading the appropriations heretofore made for Salaries and Expenses, International Exchanges, American Ethnology, Astrophysical Observatory, and National Collection of Fine Arts of the Smithsonian Institution and for Maintenance and Operation of the United States National Museum.)	
Preservation of collections	628,800.00
Printing and binding	73,000.00
National Zoological Park	237,060.00
Total	1,295,480.00

In addition to the above an appropriation of $270,000 was made in the Third Deficiency Act, 1939, for the installation of an alternating current electric system in the Smithsonian Institution buildings.

The report of the audit of the Smithsonian private funds is printed below:

SEPTEMBER 24, 1940.

EXECUTIVE COMMITTEE, BOARD OF REGENTS,
Smithsonian Institution, Washington, D. C.

SIRS: Pursuant to agreement we have audited the accounts of the Smithsonian Institution for the fiscal year ended June 30, 1940, and certify the balance of cash on hand, including Petty Cash Fund, June 30, 1940 to be $393,208.66.

We have verified the record of receipts and disbursements maintained by the Institution and the agreement of the book balances with the bank balances.

We have examined all the securities in the custody of the Institution and in the custody of the banks and found them to agree with the book records.

We have compared the stated income of such securities with the receipts of record and found them in agreement therewith.

We have examined all vouchers covering disbursements for account of the Institution during the fiscal year ended June 30, 1940, together with the authority therefor, and have compared them with the Institution's record of expenditures and found them to agree.

We have examined and verified the accounts of the Institution with each trust fund.

We found the books of account and records well and accurately kept and the securities conveniently filed and securely cared for.

All information requested by your auditors was promptly and courteously furnished.

We certify the Balance Sheet, in our opinion, correctly presents the financial condition of the Institution as at June 30, 1940.

Respectfully submitted.

WILLIAM L. YAEGER,
Certified Public Accountant.

Respectfully submitted.

FREDERIC A. DELANO,

R. WALTON MOORE,
Executive Committee.

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