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FISH

Division of Fishes,
U. S. National Museum

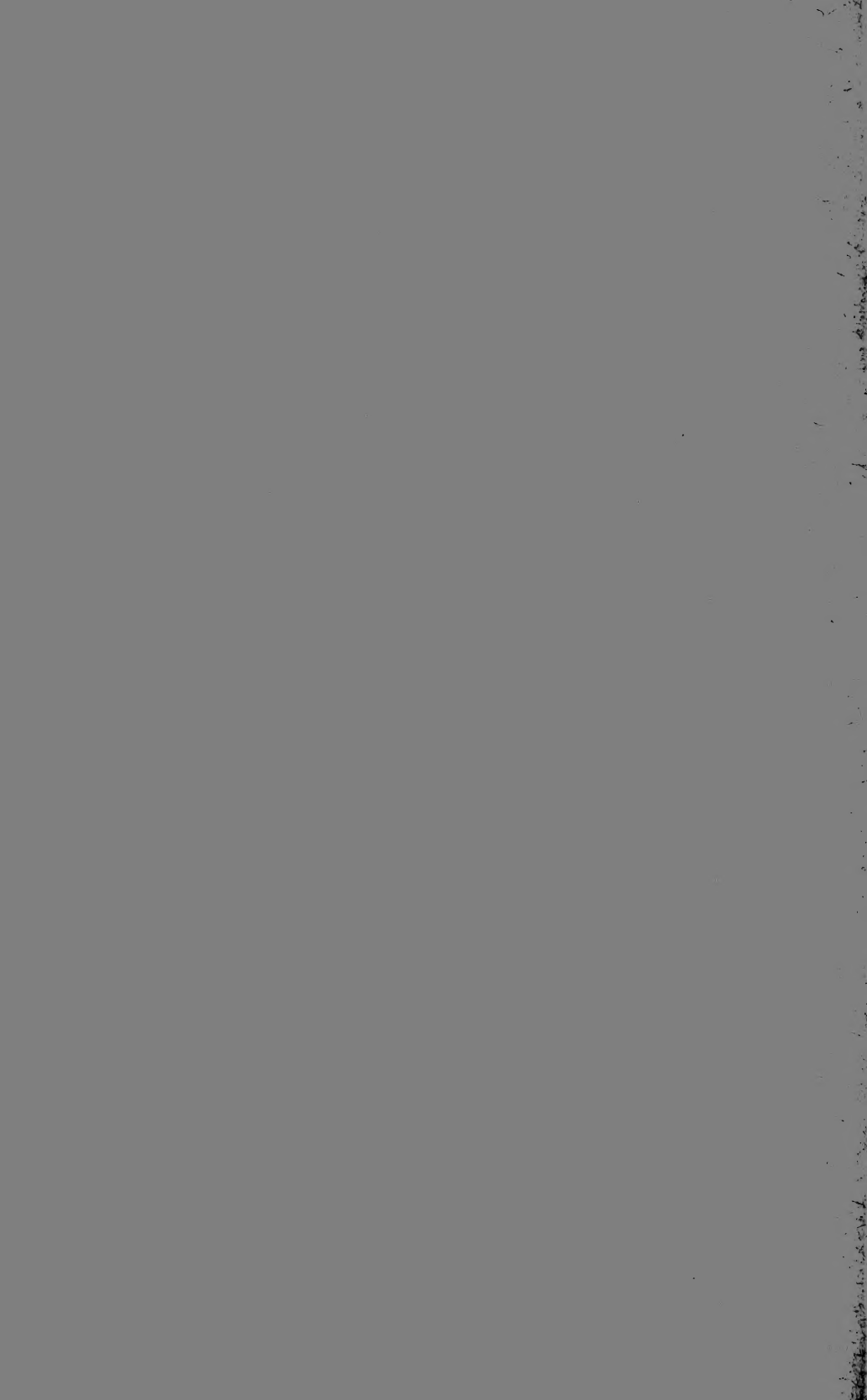
**REPORT OF THE SECRETARY
OF THE SMITHSONIAN
INSTITUTION**

AND

**FINANCIAL REPORT OF
THE EXECUTIVE COMMITTEE OF
THE BOARD OF REGENTS**

1935

**SMITHSONIAN INSTITUTION
WASHINGTON, D. C.**



REPORT OF THE SECRETARY
OF THE SMITHSONIAN
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AND

FINANCIAL REPORT OF
THE EXECUTIVE COMMITTEE OF
THE BOARD OF REGENTS

FOR THE

YEAR ENDED JUNE 30

1935



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CONTENTS

	Page
List of officials.....	1
Outstanding events.....	5
Summary of the year's activities of the branches of the Institution.....	6
The establishment.....	9
The Board of Regents.....	9
Finances.....	10
Matters of general interest.....	11
Centenary of the birth of Samuel Pierpont Langley.....	11
Award of Langley medal to Joseph S. Ames.....	11
Walter Rathbone Bacon traveling scholarship.....	12
Fourth Arthur Lecture.....	13
Smithsonian Institution Exhibit at the California Pacific International Exposition, 1935.....	13
Explorations and field work.....	14
Publications.....	15
Library.....	16
Appendix 1. Report on the United States National Museum.....	17
2. Report on the National Gallery of Art.....	24
3. Report on the Freer Gallery of Art.....	31
4. Report on the Bureau of American Ethnology.....	35
5. Report on the International Exchange Service.....	43
6. Report on the National Zoological Park.....	52
7. Report on the Astrophysical Observatory.....	61
8. Report on the Division of Radiation and Organisms.....	66
9. Report on the library.....	68
10. Report on publications.....	78
Report of the executive committee of the Board of Regents.....	84

THE SMITHSONIAN INSTITUTION

June 30, 1935

Presiding officer ex officio.—FRANKLIN D. ROOSEVELT, President of the United States.

Chancellor.—CHARLES EVANS HUGHES, Chief Justice of the United States.

Members of the Institution:

FRANKLIN D. ROOSEVELT, President of the United States.

JOHN N. GARNER, Vice President of the United States.

CHARLES EVANS HUGHES, Chief Justice of the United States.

CORDELL HULL, Secretary of State.

HENRY MORGENTHAU, JR., Secretary of the Treasury.

GEORGE H. DEBN, Secretary of War.

HOMER S. CUMMINGS, Attorney General.

JAMES A. FARLEY, Postmaster General.

CLAUDE A. SWANSON, Secretary of the Navy.

HAROLD L. ICKES, Secretary of the Interior.

HENRY A. WALLACE, Secretary of Agriculture.

DANIEL C. ROPER, Secretary of Commerce.

FRANCES PERKINS, Secretary of Labor.

Regents of the Institution:

CHARLES EVANS HUGHES, Chief Justice of the United States, Chancellor.

JOHN N. GARNER, Vice President of the United States.

JOSEPH T. ROBINSON, Member of the Senate.

M. M. LOGAN, Member of the Senate.

CHARLES L. McNARY, Member of the Senate.

T. ALAN GOLDSBOROUGH, Member of the House of Representatives.

CHARLES L. GIFFORD, Member of the House of Representatives.

CLARENCE CANNON, Member of the House of Representatives.

FREDERIC A. DELANO, citizen of Washington, D. C. (reappointment pending).

JOHN C. MERRIAM, citizen of Washington, D. C.

R. WALTON MOORE, citizen of Virginia.

ROBERT W. BINGHAM, citizen of Kentucky.

AUGUSTUS P. LORING, citizen of Massachusetts.

Executive committee.—FREDERIC A. DELANO, JOHN C. MERRIAM, R. WALTON MOORE.

Secretary.—CHARLES G. ABBOT.

Assistant Secretary.—ALEXANDER WETMORE.

Administrative assistant to the Secretary.—HARRY W. DORSEY.

Treasurer.—NICHOLAS W. DORSEY.

Editor.—WEBSTER P. TRUE.

Librarian.—WILLIAM L. CORBIN.

Personnel officer.—HELEN A. OLMSTED.

Property clerk.—JAMES H. HILL.

UNITED STATES NATIONAL MUSEUM

Keeper ex officio.—CHARLES G. ABBOT.

Assistant Secretary (in charge).—ALEXANDER WETMORE.

Associate Director.—JOHN E. GRAF.

SCIENTIFIC STAFF

DEPARTMENT OF ANTHROPOLOGY:

Walter Hough, head curator; W. H. Egberts, chief preparator.

Division of Ethnology: Walter Hough, curator; H. W. Krieger, curator; H. B. Collins, Jr., assistant curator; Arthur P. Rice, collaborator.

Section of Musical Instruments: Hugo Worch, custodian.

Section of Ceramics: Samuel W. Woodhouse, collaborator.

Division of Archeology: Neil M. Judd, curator; F. M. Setzler, assistant curator; R. G. Paine, aid; J. Townsend Russell, honorary assistant curator of Old World archeology.

Division of Physical Anthropology: Aleš Hrdlička, curator; Thomas D. Stewart, assistant curator.

Collaborator in anthropology: George Grant MacCurdy; D. I. Bushnell, Jr. Associate in historic archeology: Cyrus Adler.

DEPARTMENT OF BIOLOGY:

Leonhard Stejneger, head curator; W. L. Brown, chief taxidermist.

Division of Mammals: Gerrit S. Miller, Jr., curator; Remington Kellogg, assistant curator; A. J. Poole, scientific aid; A. Brazier Howell, collaborator.

Division of Birds: Herbert Friedmann, curator; J. H. Riley, associate curator; Alexander Wetmore, custodian of alcoholic and skeleton collections; Casey A. Wood, collaborator; Arthur C. Bent, collaborator.

Division of Reptiles and Batrachians: Leonhard Stejneger, curator; Doris M. Cochran, assistant curator.

Division of Fishes: George S. Myers, assistant curator; E. D. Reid, aid.

Division of Insects: L. O. Howard, honorary curator; Edward A. Chapin, curator; William Schaus, honorary assistant curator; B. Preston Clark, collaborator.

Section of Hymenoptera: S. A. Rohwer, custodian; W. M. Mann, assistant custodian; Robert A. Cushman, assistant custodian.

Section of Myriapoda: O. F. Cook, custodian.

Section of Diptera: Charles T. Greene, assistant custodian.

Section of Coleoptera: L. L. Buchanan, specialist for Casey collection.

Section of Lepidoptera: J. T. Barnes, collaborator.

Section of Orthoptera: A. N. Caudell, custodian.

Section of Hemiptera: W. L. McAtee, acting custodian.

Section of Forest Tree Beetles: A. D. Hopkins, custodian.

Division of Marine Invertebrates: Waldo L. Schmitt, curator; C. R. Shoemaker, assistant curator; James O. Maloney, aid; Mrs. Harriet Richardson Searle, collaborator; Max M. Ellis, collaborator; William H. Longley, collaborator; Maynard M. Metcalf, collaborator; Joseph A. Cushman, collaborator in Foraminifera; Charles Branch Wilson, collaborator in Copepoda.

Division of Mollusks: Paul Bartsch, curator; Harald A. Rehder, assistant curator; Joseph P. E. Morrison, senior scientific aid; Mary Breen, collaborator.

Section of Helminthological Collections: Maurice C. Hall, custodian.

Division of Echinoderms: Austin H. Clark, curator.

DEPARTMENT OF BIOLOGY—Continued.

Division of Plants (National Herbarium): Frederick V. Coville, honorary curator; W. R. Maxon, associate curator; Ellsworth P. Killip, associate curator; Emery C. Leonard, assistant curator; Conrad V. Morton, aid; Egbert H. Walker, aid; John A. Stevenson, custodian of C. G. Lloyd mycological collection.

Section of Grasses: Albert S. Hitchcock, custodian.

Section of Cryptogamic Collections: O. F. Cook, assistant curator.

Section of Higher Algae: W. T. Swingle, custodian.

Section of Lower Fungi: D. G. Fairchild, custodian.

Associates in Zoology: C. Hart Merriam, W. L. Abbott, Mary J. Rathbun, C. W. Stiles, Theodore S. Palmer, William B. Marshall.

Associate Curator in Zoology: Hugh M. Smith.

Associate in Marine Sediments: T. Wayland Vaughan.

Collaborator in Zoology: Robert Sterling Clark.

Collaborators in Biology: A. K. Fisher, David C. Graham.

DEPARTMENT OF GEOLOGY:

R. S. Bassler, head curator.

Division of Physical and Chemical Geology (systematic and applied): W. F. Foshag, curator; Edward P. Henderson, assistant curator.

Division of Mineralogy and Petrology: W. F. Foshag, curator; Frank L. Hess, custodian of rare metals and rare earths.

Division of Stratigraphic Paleontology: Charles E. Resser, curator; Gustav A. Cooper, assistant curator; Jessie G. Beach, aid; Margaret W. Moodey, aid for Springer collection.

Section of Invertebrate Paleontology: T. W. Stanton, custodian of Mesozoic collection; Paul Bartsch, curator of Cenozoic collection.

Division of Vertebrate Paleontology: Charles W. Gilmore, curator; C. Lewis Gazin, assistant curator; Norman H. Boss, chief preparator.

Associate in Mineralogy: W. T. Schaller.

Associates in Paleontology: E. O. Ulrich, August F. Foerste.

Associate in Petrology: Whitman Cross.

DEPARTMENT OF ARTS AND INDUSTRIES:

Carl W. Mitman, head curator.

Division of Engineering: Frank A. Taylor, curator.

Section of Mechanical Technology: Frank A. Taylor, in charge; Fred C. Reed, scientific aid.

Section of Aeronautics: Paul E. Garber, assistant curator.

Section of Mineral Technology: Carl W. Mitman, in charge; Chester G. Gilbert, honorary curator.

Division of Textiles: Frederick L. Lewton, curator; Mrs. E. W. Rosson, aid.

Section of Wood Technology: William N. Watkins, assistant curator.

Section of Organic Chemistry: Aida M. Doyle, aid.

Division of Medicine: Charles Whitebread, assistant curator.

Division of Graphic Arts: R. P. Tolman, curator; C. Allen Sherwin, scientific aid.

Section of Photography: A. J. Olmsted, assistant curator.

Loeb Collection of Chemical Types: Aida M. Doyle, in charge.

DIVISION OF HISTORY: T. T. Belote, curator; Charles Carey, assistant curator; Mrs. C. L. Manning, philatelist.

ADMINISTRATIVE STAFF

Chief of correspondence and documents.—H. S. BRYANT.

Assistant chief of correspondence and documents.—L. E. COMMERFORD.

Superintendent of buildings and labor.—J. S. GOLDSMITH.

Assistant superintendent of buildings and labor.—R. H. TREMBLY.

Editor.—PAUL H. OEHSEB.

Engineer.—C. R. DENMARK.

Accountant and auditor.—N. W. DORSEY.

Photographer.—A. J. OLMSTED.

Property clerk.—W. A. KNOWLES.

Assistant Librarian.—LEILA F. CLARK.

NATIONAL GALLERY OF ART

Acting director.—RUEL P. TOLMAN.

FREER GALLERY OF ART

Curator.—JOHN ELLERTON LODGE.

Associate curator.—CARL WHITING BISHOP.

Assistant curator.—GRACE DUNHAM GUEST.

Associate.—KATHARINE NASH RHOADES.

Assistant.—ARCHIBALD G. WENLEY.

Superintendent.—JOHN BUNDY.

BUREAU OF AMERICAN ETHNOLOGY

Chief.—MATTHEW W. STIRLING.

Ethnologists.—JOHN P. HARRINGTON, JOHN N. B. HEWITT, TRUMAN MICHELSON,

JOHN R. SWANTON, WILLIAM D. STRONG.

Archeologist.—FRANK H. H. ROBERTS, Jr.

Editor.—STANLEY SEARLES.

Librarian.—ELLA LEARY.

Illustrator.—EDWIN G. CASSEDY.

INTERNATIONAL EXCHANGES

Secretary (in charge).—CHARLES G. ABBOT.

Chief Clerk.—COATES W. SHOEMAKER.

NATIONAL ZOOLOGICAL PARK

Director.—WILLIAM M. MANN.

Assistant Director.—ERNEST P. WALKER.

ASTROPHYSICAL OBSERVATORY

Director.—CHARLES G. ABBOT.

Assistant director.—LOYAL B. ALDRICH.

Research assistant.—FREDERICK E. FOWLE, Jr.

Associate research assistant.—WILLIAM H. HOOVER.

DIVISION OF RADIATION AND ORGANISMS

Director.—CHARLES G. ABBOT.

Assistant director.—EARL S. JOHNSTON.

Associate research assistant.—EDWARD D. MCALISTER.

Assistant in radiation research.—LELAND B. CLARK.

Research associate.—FLORENCE E. MEIER.

REPORT OF THE SECRETARY OF THE SMITHSONIAN INSTITUTION

C. G. ABBOT

FOR THE YEAR ENDED JUNE 30, 1935

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, 1935. The first 16 pages contain a summary account of the affairs of the Institution, and appendixes 1 to 10 give more detailed reports of the operations of the National Museum, the National Gallery of Art, 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 84 is the financial report of the executive committee of the Board of Regents.

OUTSTANDING EVENTS

Despite the continued curtailment of funds available for the Institution's work, notably the drastic reduction in appropriations for printing the scientific series normally issued by the National Museum and the Bureau of American Ethnology, marked progress has been made along several lines. Study of periodicities in the weather, related to similar periodicities found in the variation of the solar radiation, has progressed to the point where test weather forecasts have been made for 30 stations in the United States for the years 1934, 1935, and 1936. The forecasts for 1934 gave satisfactory agreement with the actual weather conditions for about two-thirds of the stations. Reductions of the solar observations for a year at the new Mount St. Katherine station indicate that they will be quite as excellent and numerous as those of the best Smithsonian station at Montezuma, Chile. John A. Roebing has generously provided funds for the continued occupation of Mount St. Katherine till 1938.

Special attention was given to the problem of the so-called Folsom man, to whom is attributed the earliest known phase of aboriginal American culture. In Colorado a Smithsonian expedition unearthed for the first time a variety of implements belonging to that culture,

including many of the typical Folsom points. A number of these implements were found in direct association with bones of an extinct form of bison. Further work at this site was under way at the close of the year.

An allotment of \$680,000 from the Public Works Administration was made for the erection of three much-needed buildings at the National Zoological Park. The Walter Rathbone Bacon traveling scholarship was awarded to Dr. Richard E. Blackwelder for an intensive study of the staphylinid beetles of the West Indies. The seventh award of the Langley Medal was made to Dr. Joseph S. Ames, chairman of the National Advisory Committee for Aeronautics, for his outstanding work in connection with the scientific development of aviation in America.

Among the year's publications may be mentioned Dr. Strong's account of the results of his archeological expedition to the Bay Islands, Spanish Honduras; Dr. Roberts' paper on his investigations of Folsom man; and the second in the Freer Gallery's series of Oriental Studies, "A Descriptive and Illustrated Catalogue of Miniature Paintings of the Jaina Kalpasūtra as Executed in the Early Western Indian Style", by W. Norman Brown, with 45 full-tone plates.

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

National Museum.—The appropriations for the year totaled \$716,071, an increase of \$61,200 over last year. New specimens added to the collections numbered 296,468. These included anthropological material representing many of the North and South American Indian tribes, large collections of natural-history specimens resulting from field work in Brazil by Dr. Doris Cochran and from a third Hancock expedition to the Galapagos Islands participated in by Dr. W. L. Schmitt, biological specimens from Siam and China sent by Dr. Hugh M. Smith and Dr. D. C. Graham, a valuable collection of Paleozoic fossils presented by Edward N. Hurlburt, of Rochester, N. Y., and nearly 50,000 plant specimens from various sources. To the industrial series were added the motorless sailplane *Falcon* (1934), the cup presented to the winner of the first Vanderbilt automobile race 30 years ago, several interesting ship and locomotive models, and a complete Mergenthaler linotype (no. 9). Field work, though greatly limited from lack of funds, was carried on chiefly through the cooperation and generosity of outside individuals, through grants from the Smithsonian Institution, and through assistance from the P. W. A. It will be described in detail in the special report of the Museum in Appendix 1. Visitors to the several Museum buildings during the year totaled 1,841,306.

Under the auspices of various educational, scientific, or Government agencies, 17 special exhibits were held during the year in the foyer of the National Museum.

National Gallery of Art.—Seven special exhibitions were held during the year, representing the work of Clayton Knight, Alexander Trowbridge, Emil Jacques, William Woollett, Elena and Bertha de Hellebranth, Howard Fremont Stratton, and the artists enrolled in the Civilian Conservation Corps camps. A number of art works were accessioned subject to transfer to the Gallery if approved by the National Gallery of Art Commission. Under the Catherine Walden Myer fund, two early American miniatures were purchased for the Gallery. The 14th annual meeting of the National Gallery of Art Commission was held on December 11, 1934.

Freer Gallery of Art.—The year's additions to the collection include Chinese bronzes, jade, and ceramics, Syrian glass, Arabic and Persian manuscripts, Chinese, Indian, and Persian paintings, Persian silver, and Arabic wood-carving. Curatorial work was devoted to the study of Chinese, Japanese, Armenian, Arabic, and Persian objects, and of the texts and seals associated with them. During the year 1,268 objects and 153 photographs of objects were submitted to the curator for an opinion as to their identity, meaning, or historical or esthetic value. Visitors totaled 130,346, and 78 groups were given docent service. The special exhibition of Whistler's work installed on May 14, 1934, in honor of the Whistler Centenary, was taken down on December 26.

Bureau of American Ethnology.—Systematic researches conducted by members of the Bureau staff included investigation of finds of the eastern type of Folsom points in Virginia, inspection of mound excavations near Macon, Ga., examination of archeological sites in Georgia and Florida, researches on the ethnology of the Indians of California and other related western Indians, and extensive study and publication on the problem of Folsom man, based on explorations at the Lindenmeier site, Colorado. Linguistic studies were conducted on several Indian languages, including Timucua, Natick, and Algonquian. Further researches were carried on relating to the League of the Iroquois, and a number of Indian songs were recorded at the Century of Progress Exposition. Extensive reports were published on the archeology of Nebraska and of the Bay Islands of Spanish Honduras.

International Exchanges.—In the official exchange with other countries of governmental and scientific documents, the exchange service handled during the year a total of 654,131 packages, weighing 560,381 pounds. There are now 111 full and partial sets of governmental documents and 102 copies of the daily issue of the Congressional Record sent to foreign depositories.

National Zoological Park.—Accessions to the collection during the year numbered 627, and removals through various causes totaled 695, leaving the collections at the close of the year at 2,170 animals, representing 665 different species of mammals, birds, reptiles, and other forms. The number of visitors was 2,046,149, including groups from 394 schools in 20 States and the District of Columbia. An allotment of \$680,000 was made on January 26, 1935, by the Public Works Administration for the construction of a small mammal house, a pachyderm house, an addition to the bird house, and mechanical shops, buildings that have been urgently needed for many years. Work was immediately started on the plans and specifications in the office of the Supervising Architect, with Edwin H. Clarke as consulting architect. Much work was also done on the buildings and grounds with labor and materials supplied by the Emergency Works Administration. The greatest need of the Zoo is for more liberal appropriations for the purchase of specimens.

Astrophysical Observatory.—Regular observations of the solar constant of radiation have been continued daily at the three solar observing stations at Table Mountain, Calif.; Montezuma, Chile; and Mount St. Katherine, Egypt. The observations from Mount St. Katherine have been reduced at the central station at Washington under the direction of the assistant director, L. B. Aldrich, assisted by a special staff of computers made available under a grant from John A. Roebling. The results indicate that this station, established in 1933, will prove to be one of high excellence. Analysis of solar variation since 1920 has revealed 12 periodicities, all aliquot parts of 23 years. These periodicities are also found in temperature and precipitation records for six terrestrial stations for the past century, and the 23-year cycle is found in the levels of lakes and streams, the widths of tree-rings, the catches of ocean fish, varves of Pleistocene and Eocene geologic age, and other phenomena depending on weather. Forecasts of temperature and precipitation for 1934, 1935, and 1936 for over 30 stations in the United States have been made, and satisfactory agreement between forecasts and the events have been found for two-thirds of the stations during 1934.

Division of Radiation and Organisms.—The following investigations were undertaken by the scientific staff of the Division: The dependence of the growth of algae and wheat on the wave lengths of radiation, determined by experiments conducted with Christiansen filters specially adapted to this work by improvements made in the Division; growth experiments on tomato plants under control as to temperature, humidity, and color and intensity of radiation; experiments in cooperation with the United States Department of Agriculture on the promotion and inhibition of the germination of seeds under different selected wave lengths of light; and an experiment

on the growth of wheat under out-of-door conditions with controlled quantities of carbon dioxide. Several papers embodying the results of these investigations were published during the year in the Smithsonian Miscellaneous Collections, and others were in preparation.

THE ESTABLISHMENT

The Smithsonian Institution was created by act of Congress in 1846, according to the terms of the will of James Smithson, of England, who in 1826 bequeathed his property to the United States of America "to found at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men." In receiving the property and accepting the trust, Congress determined that the Federal Government was without authority to administer the trust directly, and, therefore, constituted an "establishment" whose statutory members are "the President, the Vice President, the Chief Justice, and the heads of the executive departments."

THE BOARD OF REGENTS

The affairs of the Institution are administered by a Board of Regents whose membership consists of "the Vice President, the Chief Justice, three Members of the Senate, and three Members of the House of Representatives, together with six other persons other than Members of Congress, two of whom shall be resident in the city of Washington and the other four shall be inhabitants of some State, but no two of them of the same State." One of the regents is elected chancellor of the board. In the past the selection has fallen upon the Vice President or the Chief Justice, and a suitable person is chosen by the regents as Secretary of the Institution, who is also secretary of the Board of Regents, and the executive officer directly in charge of the Institution's activities.

Changes in the personnel of the Board during the year included the appointment on January 23, 1935, of Senator Charles L. McNary, of Oregon, as a regent to succeed Senator David A. Reed, whose term as a Senator expired January 3, 1935; and the appointment by the Speaker on February 21, 1935, of Representative Clarence Cannon, of Missouri, to fill out the unexpired term to December 25, 1935, of Representative E. H. Crump, whose term as a Representative had expired on January 3, 1935.

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—Joseph T. Robinson, M. M. Logan, Charles L.

McNary; members from the House of Representatives—T. Alan Goldsborough, Clarence Cannon, Charles L. Gifford; citizen members—Frederic A. Delano, Washington, D. C. (reappointment pending before Congress); John C. Merriam, Washington, D. C.; R. Walton Moore, Virginia; Robert W. Bingham, Kentucky; Augustus P. Loring, Massachusetts.

Proceedings.—Only one meeting of the full Board was held during the year—the annual meeting on January 17, 1935. This date for the annual meeting was fixed by a resolution adopted by the Board on December 14, 1933, naming “the second Thursday following the first Monday in January” thereafter as the date for the annual meeting, on account of the change of the date for the annual convening of Congress to January 3. The regents present were Chief Justice Charles Evans Hughes, chancellor, Senators Joseph T. Robinson and M. M. Logan, Representatives T. Alan Goldsborough and Charles L. Gifford, Frederic A. Delano, Hon. Irwin B. Laughlin, Hon. R. Walton Moore, Augustus P. Loring, Dr. John C. Merriam, and the Secretary, Dr. Charles G. Abbot.

The Secretary presented his annual report, detailing the activities of the several Government branches and of the parent Institution during the year, and Mr. Delano presented the report of the executive committee, covering financial statistics of the Institution. The Secretary also presented the annual report of the National Gallery of Art Commission.

The Secretary presented his usual special report reviewing the outstanding events of the year, and Mr. Delano presented resolutions prepared by the Permanent Committee, calling the attention of the President of the United States to the urgency of grants from the Public Works Administration to carry out the Institution's building program. A resolution was adopted authorizing the transfer of the income of the Loeb fund for a chemical type museum to other purposes in connection with the library of the Chemists' Club of New York City, under certain conditions.

The Board adopted a resolution awarding the Langley Gold Medal for Aerodromics to Dr. Joseph Sweetman Ames.

The meeting then adjourned, and the regents inspected the special exhibits in the Secretary's office illustrative of some of the Institution's recent activities.

FINANCES

A statement will be found in the report of the executive committee, page 84.

MATTERS OF GENERAL INTEREST

CENTENARY OF THE BIRTH OF SAMUEL PIERPONT LANGLEY

On August 22, 1934, the Institution commemorated the one-hundredth anniversary of the birth of Samuel Pierpont Langley, its third Secretary, and one of the foremost American scientists of the nineteenth century. On that date there was issued a pamphlet consisting of extracts from Langley's own writings, in which he described his important discoveries in astronomy, astrophysics, physics, and aeronautics. This pamphlet reveals strikingly the value and breadth of Langley's researches. To the public, his name is best known in connection with his work in aeronautics, but to men of science his fundamental researches in astronomy and physics are of outstanding importance. The titles of some of the papers from which quotations are given in the memorial pamphlet will reveal the scope of his interest: "On the minute structure of the solar photosphere"; "The total solar eclipse of July 29, 1878"; "The bolometer and radiant energy"; "On the amount of atmospheric absorption"; "The temperature of the moon"; "On hitherto unrecognized wave-lengths"; "On a possible variation of the solar radiation and its probable effect on terrestrial temperatures."

A special exhibition was also arranged in the Smithsonian Building of scientific apparatus invented by Langley and of articles associated with him during his lifetime. Outstanding among his inventions was the bolometer, an electrical thermometer capable of detecting a change of heat as little as a millionth of a degree Centigrade.

AWARD OF LANGLEY MEDAL TO JOSEPH S. AMES

The Langley Medal for Aerodromics of the Smithsonian Institution was presented on May 21, 1935, to Dr. Joseph S. Ames, of Johns Hopkins University, Chairman of the National Advisory Committee for Aeronautics, and for years one of the foremost figures associated with the scientific development of American aviation. The presentation was made by Chief Justice Charles E. Hughes, Chancellor of the Institution, in accordance with the award of the Board of Regents at their annual meeting in January. The award, it was stated in the resolution accompanying the medal, was "in recognition of the surpassing improvement of the performance, efficiency, and safety of American aircraft resulting from the fundamental scientific researches conducted by the National Advisory Committee for Aeronautics under the leadership of Dr. Ames."

He was one of the 12 original members of this committee appointed by President Wilson in 1915. He has served on 20 of its

subcommittees and acted as chairman of many of them. He has been executive head of the organization since 1919, during which time it has developed the famous Langley Laboratory, where many airplane improvements now universally in use have been devised.

In accepting the medal, Dr. Ames said:

Mr. CHANCELLOR:

It is with the utmost pleasure that I accept the Langley Medal, and I beg to express to you and your associates my sincere thanks for the great honor paid me. There is no honor in the field of aeronautics as great as this.

When your secretary, Dr. Abbot, informed me that it had been voted to bestow the medal upon me, I was overwhelmed by a feeling of unworthiness. I had not made any contribution of note either to the science or to the art of aeronautics. But I soon realized that the award was not made to me as the result of such services as these, but rather as the result of my connection with the National Advisory Committee for Aeronautics. I think everyone will grant that no single factor has had such a great influence in the notable progress in both theoretical and applied aeronautics in this country during the past 20 years as the National Advisory Committee for Aeronautics, and I am proud to think that your Committee of Award consider me as in some way responsible for the guidance of this work. This point of view I can understand. For I have been a member of the committee since it was established and its executive head for many years. But only I know how far from justified any one is in attributing the good work of the committee to me. I have simply done my best to make it possible for our scientists and engineers to perform their investigations and to so cooperate with my associates on the committee as to direct its policy wisely.

In recognizing this type of administrative work as of such value as to merit the award of the Langley Medal, I think that your committee, Mr. Chancellor, is not alone justified but also wise, and I am particularly pleased by the fact that this honor comes to our committee while I am its chairman.

WALTER RATHBONE BACON TRAVELING SCHOLARSHIP

The Walter Rathbone Bacon traveling scholarship of the Smithsonian Institution was awarded in May 1935 to Dr. Richard E. Blackwelder, at that time engaged in entomological work at the United States National Museum, for an intensive study of the staphylinid beetles of the West Indies. Dr. Blackwelder will collect these beetles, comprising one of the largest and least-known animal families on earth, on 25 West Indian Islands, including Cuba, Hispaniola, Puerto Rico, and Jamaica. Because of the small size and, as a rule, economic unimportance of this family, it has been much neglected.

The entomologist will make an intensive search for specimens in West Indian anthills. Several species are commensal with ants and, because of this way of life, have developed curious forms. Some of them seem to be kept by the ants as "domestic animals." They are

housed, protected, and fed by their hosts because of the body secretion, which is a favorite food of the hosts. Some, on the other hand, seem to live with the ants entirely for the purpose of feeding on them and on their young. Even these are tolerated by their hosts, who apparently have no realization of how they are being victimized.

Staphylinid beetles are also numerous in fungous deposits and in decaying vegetable matter. They remain hidden much of the time, so that little information is available on their habits and life histories. They are found over most of the world. Large collections have been made in Europe and in the United States, and the National Museum has a considerable representation of the different species. The West Indies constitute largely unexplored territory, so far as these beetles are concerned, and it is probable that many new species will be identified from Dr. Blackwelder's collection.

After completing his work in the West Indies, Dr. Blackwelder will study the large collections in the British Museum.

FOURTH ARTHUR LECTURE

Under a bequest received in 1931 from the late James Arthur, of New York City, a lecture is delivered each year at the Institution on some phase of the study of the sun.

The fourth annual Arthur Lecture was given in the auditorium of the National Museum on December 18, 1934, by Dr. Walter S. Adams, director of the Mount Wilson Observatory, on "The Sun as a Typical Star." Dr. Adams, one of the foremost astronomers of the world, has made original researches on the place of the sun among the billions of stars of the galaxy. The lecture will be published in the general appendix to the Smithsonian Report for 1935.

SMITHSONIAN INSTITUTION EXHIBIT AT THE CALIFORNIA PACIFIC INTERNATIONAL EXPOSITION, 1935

The Smithsonian exhibit at the California Pacific International Exposition, which opened at San Diego May 29, 1935, was prepared under the direction of Carl W. Mitman, head curator of arts and industries, National Museum. It is one of a group visualizing activities of the major departments and independent establishments of the Federal Government. All these exhibits are installed in a newly constructed permanent building simulating an Aztec temple erected in the Exposition grounds. They are distributed over the single floor of the building, the area of which is 170 by 150 feet. The space assigned to the Smithsonian Institution is 38 feet long by 13 feet wide, and is situated along the wide wall to the west or right of the main entrance.

The limited allotment of space and money for the participation of the Smithsonian Institution in the Exposition precluded the preparation of either a general exhibit of all Smithsonian activities or a complete exposition of any single activity. A small exhibit was, therefore, prepared to indicate some of the ethnological work of the Institution in the Southwest.

The space is arranged in the form of a rectangular alcove, the sides of which are exhibition cases 12 feet deep by 9 feet wide. For the rear wall area there was designed a pictorial map of the Southwest, 8 by 6 feet in size. This was painted by Benson B. Moore, of Washington, D. C., in old cartographic style and portrays the journeys of the Spanish explorer, Coronado, in the Southwest in 1540-1543, together with many sites of modern explorations made in this area by the Institution.

According to the historic record of his explorations, Coronado first contacted the Apache Indians and subsequently conquered the Zuñi. In the exhibition cases flanking the map, therefore, there are installed life-size habitat groups of these tribes; the Apache family group of five figures on the left flank and the Zuñi family group of eight figures on the right flank—all dressed in original costumes from the National Museum collections. Landscapes typical of the country in which these tribes live are painted on the closed sides of the cases and form realistic backgrounds for the groups. These paintings were executed by Richmond I. Kelsey, of San Diego, Calif. A descriptive label for each group is mounted on the rear wall in the space between the map and exhibition case. A third label records briefly the Institution's history and activities.

The Exposition was still open at the close of the year and was expected to remain open at least until November 1935.

EXPLORATIONS AND FIELD WORK

Although still considerably hampered in its field operations by lack of funds, the Institution conducted or took part in 20 expeditions, 7 more than in the previous year. Secretary Abbot and his colleagues continued the study of the radiation of the sun, both at Washington and at the three field stations, Table Mountain, Calif., Mount Montezuma, Chile, and Mount St. Katherine, Egypt. Dr. W. F. Foshag collected minerals and studied mineral deposits in both northern and southern Mexico. Dr. C. Lewis Gazin directed an expedition to collect vertebrate fossils in the Snake River basin of Idaho. Dr. G. A. Cooper established a correlation of middle Devonian deposits in Ontario, New York, and Michigan. Dr. W. L. Schmitt again accompanied the Hancock expedition to the Galápagos Islands. Rev. David C. Graham continued his zoological col-

lecting for the Institution in Szechwan, China. Dr. Hugh M. Smith collected birds, mammals, and other forms in various parts of Siam. Austin H. Clark collected butterflies in Bedford and Princess Anne Counties, Va., in continuation of his survey of the little-known butterfly fauna of Virginia. Jason R. Swallen collected grasses in north-eastern Brazil.

Dr. C. W. Bishop, director of the Freer Gallery Field Expedition to China, brought the work to a close in 1934 and returned to the United States. The work of the expedition occupied a period of over 4 years and included the excavation of a number of archeological sites and an archeological reconnaissance of nearly the entire province of Shansi. Dr. Aleš Hrdlička continued his archeological investigations on Kodiak Island, Alaska, unearthing much new evidence on the identity of the ancient inhabitants of the site. H. W. Krieger, through an allotment of P. W. A. funds, excavated archeological sites in Oregon in the area that will be flooded with the completion of the Bonneville Dam. M. W. Stirling supervised several archeological projects in Florida conducted in cooperation with the Federal Emergency Relief Administration. Dr. F. H. H. Roberts, Jr., excavated a camp site and workshop in Colorado attributable to Folsom man, bringing to light for the first time a variety of implements belonging to that early horizon. Dr. Roberts also excavated an extensive Indian site on the former battlefield at Shiloh National Military Park, Tenn. Dr. W. D. Strong conducted archeological excavations at Buena Vista Lake, Calif., and later made a brief archeological reconnaissance of the Cuyama Valley and also of the mountainous district adjacent to the Sisquoc River. W. M. Walker excavated ancient Yokuts shellmounds near Taft, Calif. Dr. J. R. Swanton was successful in further determining points on the route followed by Hernando De Soto in 1540 through Georgia and part of South Carolina. Dr. J. P. Harrington conducted ethnological studies among the Indians of California. Dr. Truman Michelson studied the Passamaquoddy Indians on the State reservation on the coast of Maine.

These expeditions are briefly described and illustrated in the pamphlet entitled "Explorations and Field-Work of the Smithsonian Institution in 1934", Smithsonian publication no. 3300.

PUBLICATIONS

Again this past year the drastic curtailment of printing funds for the Government bureaus under the Institution has vitally affected the work of those bureaus. The scientific series normally published by the National Museum and by the Bureau of American Ethnology have again been virtually suspended. During the emergency period

of the depression, when ordinary governmental expenditures were greatly reduced, the brunt of the cut in Smithsonian appropriations was borne by the printing fund, as only there could a saving be made without throwing employees out of work. For 3 years the printing appropriation has been reduced to a point where it is possible only to do routine printing of blank forms and reports and a few very small pamphlets, with the result that there is now on hand an accumulation of valuable manuscripts, many of them representing the results of years of research by the Institution's specialists. This basic information in biology, geology, and anthropology should without further delay be made available to students and research workers, and it is the hope of the Institution that, now the peak of the depression is past, adequate funds will again be made available so that a normal flow of scientific publications may again issue from this Institution, whose very purpose, as incorporated by act of Congress, is "the increase and diffusion of knowledge among men."

The publications issued during the year, paid for mostly from the private funds of the Institution, totaled 64; 54 of these were published by the Institution proper, 8 by the National Museum, 1 by the Bureau of American Ethnology, and 1 by the Freer Gallery of Art. The number of publications distributed was 124,186.

LIBRARY

The accessions to the Smithsonian library during the year numbered 6,105 volumes and 6,578 pamphlets and charts, bringing the total number of items in the library to 848,517. Most of the additions were exchanges for Smithsonian publications, but there were also the usual large number of gifts from organizations and individuals. In addition to the routine work of the library, the staff completed several important projects begun last year, with the assistance of F. E. R. A. workers assigned to the library; these projects included sorting and arranging foreign scientific and technical duplicates in the west stacks of the Smithsonian building, and sorting and reassigning the contents of the sectional libraries of administration and engineering.

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, 1935:

Appropriations for the maintenance of the National Museum for the year totaled \$716,071, which was \$61,200 more than for 1934.

COLLECTIONS

Material added to the collections during the year came in 1,794 separate accessions, mostly as gifts from outside individuals and organizations, and was varied and representative in character. It totaled 296,468 specimens, divided as follows: Anthropology, 3,758; biology, 258,692; geology, 28,528; arts and industries, 3,808; history, 1,682. Gifts to schools and other educational institutions numbered 4,039 specimens. Exchanges of duplicate material with other institutions and individuals totaled 17,194 specimens, and 17,783 specimens were lent to workers outside of Washington.

Following is a summary of the more important accessions received in the various departments:

Anthropology.—American ethnological material received from various sources represented the Point Barrow Eskimos, the Haida Indians of British Columbia and Alaska, the Navaho, the Tarahumare Indians of Mexico, the Delaware, Osage, Plains, Pueblo, and Yakima Indians of North America, and the San Blas Indians of Panama. From Matto Grosso, Brazil, came a number of weapons of the fierce Parintintin Indians, and from the head-hunting Jivaro of Ecuador a collection of textiles and adornments received through the Bureau of American Ethnology. Specimens came also from Africa, Oceania, and Malaysia. As in former years, ethnological material presented by Dr. Hugh M. Smith, fisheries adviser to the Royal Siamese Government, was extensive.

Among the noteworthy archeological material received was a plaster cast, presented by the Carnegie Institution of Washington, of the elaborately carved surface of a Maya altar at Quirigua, Guatemala, regarded as one of the finest examples of aboriginal sculpture recovered from the Maya area. By transfer from the Bureau of American Ethnology came over 300 specimens collected by Dr. W. D. Strong from the Bay Islands and from the mainland

of Spanish Honduras. Also may be mentioned 214 flint objects from a Paleolithic deposit in Mugharet et-Tabun (Cave of the Oven), near Mount Carmel, Palestine, deposited by the Archeological Society of Washington; 1,188 stone artifacts, basketry fragments, and other material collected by Frank M. Setzler from 2 caves in Val Verde County, Tex.; 3 terra-cotta cones from Ur of the Chaldees, Iraq, bearing inscriptions that date them about 2075 B. C., given by the Bruce Hughes fund; 52 stone implements from South Africa, donated by W. C. Abbott, of Cape Town; and earthenware vessels from Panama, ivory and bone harpoon heads from St. Lawrence Island, Alaska, and Paleolithic implements from the Thames Valley, England.

Skeletal material received came from Florida, California, and North Carolina, and from Kodiak Island, Alaska, collected by Dr. Aleš Hrdlička. Skeletons collected by Frank M. Setzler, though few in number, were important because of the new type and area represented.

Biology.—A special feature of this year's biological accretions was the large number of genera and species new to the collections. Much invaluable type material also was received. Many rare species of mammals and birds from Siam and China came from Dr. Hugh M. Smith and Dr. D. C. Graham, respectively, who contributed from these countries also considerable collections of reptiles and amphibians, fishes, insects, mollusks, marine invertebrates, and plants. Among the forms now represented for the first time were the Saiga antelope from the Kalmuk Steppes of South Russia (of which the Museum formerly had only a skeleton), a sloth (*Scaeoopus*) and a monkey (*Brachyteles*) from South America, a porpoise taken on the third Hancock Galapagos expedition, 15 genera of birds, and a number of species of West Indian beetles. Other noteworthy accessions include: A large collection of Brazilian reptiles, amphibians, fishes, insects, and mollusks made by Dr. Doris Cochran; over 3,000 fishes comprising the private collection of Dr. G. S. Myers; 2,400 Florida fishes collected by C. R. Aschmeier; a collection of South American Homoptera made by the late Dr. F. W. Goding; a collection of Oriental insects made by T. R. Gardner; the J. E. Guthrie collection of Collembola; 3,000 New England insects, mostly Homoptera, from P. W. Oman; a valuable series of invertebrates collected under the auspices of the late C. C. Nutting, of the University of Iowa; crustaceans and other forms collected by Dr. W. L. Schmitt on the third Hancock expedition to the Galapagos Islands; about 30,000 mollusks, chiefly European, from Dr. H. R. K. Agersborg; and nearly 50,000 specimens of plants from many sources, representing a wide variety of localities.

Geology.—To the Canfield collection were added 174 mineral specimens, including a rich mass of North Carolina uraninite showing crystals and weighing over 5 pounds, obtained through the interest of Dr. H. P. Barret. Through the income of the Roebling fund 393 mineral specimens were added, of special interest being a collection of minerals from pegmatitic pockets in the granite area of Striegau, Germany, and the material resulting from Dr. W. F. Foshag's field work in Mexico under the auspices of the fund. Many of the Museum's friends contributed valuable mineral specimens, many of them from Mexico. Species of minerals new to the Museum include ahlfeldite, blockite, kolbeckite, and selenolite from Bolivia; aglaurite from Czechoslovakia; igalikite, metajarlite, and naujakasite from Greenland; johannsenite from Mexico; repossite from Italy; and sahlinite from Sweden. Dr. Eugene Poitevin presented a specimen of his new mineral ashtonite.

The increase in the meteorite collection was especially notable, 25 new falls being added, bringing to 592 the total number of distinct meteoric falls now represented.

About 500 rock specimens were added to the Henry S. Washington petrographic series. Accession of ores was of increased importance, several mining companies as well as individuals donating valuable samples. From the United States Geological Survey a collection of described material was received illustrating the petrology of the Louisiana and Texas cap-rocks.

The outstanding gift of the year in invertebrate paleontology was the Hurlburt collection of Lower Paleozoic fossils, especially rich in rare New York Ordovician trilobites, crinoids, cystids, and mollusks. This collection was presented by Edward N. Hurlburt, of Rochester, N. Y., as a memorial to his father, who assembled it in the early days of American paleontology. Nine gifts furnished fossils from countries beyond North America, which are especially valuable for comparative purposes. About 30,000 Devonian and other Paleozoic fossils were collected for the Museum by Dr. G. A. Cooper in Michigan, Ontario, and New York, and (with R. D. Mesler) about 10,000 fossils in Virginia, Tennessee, and Arkansas.

Materials resulting from the field expedition to Idaho under Dr. C. L. Gazin are of first importance in vertebrate paleontology. Fossil remains of the extinct horse *Plesippus shoshonensis* formed the bulk of the collections. An excellent skeleton of the sauropod dinosaur *Camarasaurus* was obtained through exchange with the Carnegie Museum of Pittsburgh.

Arts and industries.—The outstanding accession in aeronautics was the motorless sailplane *Falcon*, built in 1934 for the late Warren Eaton, which well illustrates modern progress in aerodynamic efficiency. It was presented by Mrs. Genevieve J. Eaton. The May-

bach Motor Co. presented a Maybach engine, type VI-2, like that used in the *Graf Zeppelin* and other recent airships. Other aeronautic material received included the magnetic compass used by Admiral Byrd in his 1926 North Pole flight, 13 excellent scale models of aircraft, and a series of aluminum alloy fittings and airship girders.

In mechanical technology, models of watercraft figured in the accessions, the most important being the original models of the schooner *James S. Steele* and the knockabout *Helen B. Thomas*, designed by Capt. Thomas F. McManus.

The automobile collection was enhanced by the gift of William K. Vanderbilt of the cup presented to the winner of the first Vanderbilt Cup Race 30 years ago. One railroad accession was received—a model of the locomotive *DeWitt Clinton* and train, the first locomotive to run in the State of New York.

One hundred and eight specimens of new textile fabrics, illustrating new weaves and combinations; 31 dioramas showing the history of medicine-making; and a complete Mergenthaler linotype (no. 9) were among other outstanding accessions.

History.—Over 1,600 articles of historical and antiquarian import were received, many falling within the military and naval categories. The numismatic collection was increased by 136 coins and the philatelic series by 1,314 stamps.

EXPLORATIONS AND FIELD WORK

Field work carried on during the year was financed mainly through grants from the invested funds of the Smithsonian Institution, with some additional assistance from such outside sources as the P. W. A. and interested friends.

Anthropology.—In December, Herbert W. Krieger, curator of ethnology, brought to a close the archeological work commenced last year in the Columbia River Valley. Search for new light on early Virginia tribal life was made by Mr. Krieger and H. B. Collins, Jr., in field studies made at Indian village sites along the lower Potomac River and elsewhere in the State.

Frank M. Setzler, assistant curator of archeology, late in 1934, accompanied Dr. John R. Swanton in a trip by automobile through Virginia, North Carolina, South Carolina, Georgia, and Florida, to seek information concerning the route traveled by Hernando De Soto in 1539 and 1540 and to examine vestiges of certain Indian villages mentioned by the chroniclers of the De Soto expedition.

Dr. Aleš Hrdlička, curator of physical anthropology, with a group of five students, continued his archeological work on Kodiak Island, Alaska, which has been in progress intermittently since 1932.

Biology.—Dr. Waldo L. Schmitt, curator of marine invertebrates, by invitation participated again in Capt. G. Allan Hancock's expedition to the Galapagos Islands on the yacht *Vebero III*, and brought back several thousand natural-history specimens.

Dr. Doris M. Cochran, assistant curator of reptiles and amphibians, under a grant from the Smithsonian Institution, was detailed to Brazil to study Brazilian amphibians. She returned early in June with many thousand specimens, including not only amphibians and reptiles but also representing several other branches of zoology.

Gerrit S. Miller, Jr., curator of mammals, spent several weeks studying the fauna of the outlying keys of southern Florida and made extensive collections there of mammals, reptiles, and other forms.

Dr. Hugh M. Smith, honorary associate curator of zoology, who for many years has represented the Museum in explorations in Siam, returned to Washington and brought with him large collections that added greatly to the Museum's Siamese material. Dr. D. C. Graham, honorary collaborator in biology, from his headquarters at Chengtu, China, continued to send valued specimens resulting from his excursions in the Chinese province of Szechwan.

Jason R. Swallen, Department of Agriculture botanist, brought to a close a successful period of exploration for grasses in Brazil during which he obtained 8,000 specimens. Another piece of field work concluded was that of Dr. Alan Mozley, working under the Walter Rathbone Bacon traveling scholarship in a study of Siberian mollusks. Also may be mentioned local work by members of the Museum staff on a study of the biota of Maryland and Virginia: Dr. G. S. Myers and E. D. Reid studied and collected fresh-water fishes from this area; Dr. Paul Bartsch made extensive collections of mollusks, amphibians, and birds with reference to the District of Columbia fauna; and Austin H. Clark studied Virginia butterflies, visiting 54 counties of the State.

Prof. C. E. Burt, of Southwestern College, under a grant from the Smithsonian, worked in Mississippi, Louisiana, and Texas collecting a series of turtles for the Museum.

Geology.—C. W. Gilmore, curator of vertebrate paleontology, near the close of the year left for Montana to take charge of an expedition into the Judith River (Upper Cretaceous) of that State, where a search was to be made for dinosaur material.

The expedition under the direction of Dr. C. L. Gazin, assistant curator of vertebrate paleontology, at the fossil quarries near Hagerman, Idaho, was gratifyingly successful, the material acquired nearly equaling the previous combined collections from the same locality. Fossil remains of the horse *Plesippus* formed the bulk of the material.

Dr. W. F. Foshag, curator of mineralogy, spent 4 months in Mexico collecting minerals under the auspices of the Roebling fund, visiting important mining districts in the Sierra Madres of western Chihuahua and vicinity and in southern Mexico.

E. P. Henderson, assistant curator of mineralogy, investigated reports of meteorites and collected minerals in Arkansas, Kansas, and Virginia.

Dr. G. A. Cooper, assistant curator of stratigraphic paleontology, with a group of Geological Survey geologists, studied the region near Phillipsburg, Quebec, and collected many fossils. He also visited the lower peninsula of Michigan, to study the Devonian strata near Alpena, as well as southwestern Ontario, northwestern Ohio, and western New York. Also, with R. D. Mesler, of the Geological Survey, he collected fossils at Batesville, Ark.

MISCELLANEOUS

Visitors.—Visitors during the year to the various Museum buildings totaled 1,841,306, an increase of 377,931 over the previous year. The annual attendance in the several buildings was recorded as follows: Smithsonian Building, 307,240; Arts and Industries Building, 798,535; Natural History Building, 606,145; Aircraft Building, 129,386. During April 1935 there were 307,739 visitors, the largest number ever recorded for a single month.

Publications.—On account of the greatly curtailed allotments for printing, the publication output of the Museum was small. Only 8 papers were issued during the year, including the annual report for 1934 and 7 Proceedings papers. These are listed elsewhere in this report. Volumes and separates distributed during the year to libraries and individuals throughout the world aggregated 26,592 copies.

Work was continued, under the supervision of the Museum editor, on the preparation of the index to Museum publications started last year.

Special exhibits.—Seventeen special exhibits were held during the year, under the auspices of various educational, scientific, and Government agencies, including, among others, the American Forestry Association, the Potomac Rose Society, the District of Columbia Dental Society, the American Society of Photogrammetry, the Public Works Administration, and the Commission of Fine Arts.

Changes in organization and staff.—Dr. Edward A. Chapin, of the United States Bureau of Entomology and Plant Quarantine, was appointed on July 1, 1934, to succeed the late Dr. John M. Aldrich as curator of the division of insects. In the division of

mollusks, Dr. Joseph P. E. Morrison was appointed senior scientific aid on August 2. A realignment of work in the division of graphic arts resulted in the permanent appointment on May 20, 1935, of C. Allen Sherwin as scientific aid. Miss Mary E. Dillingham was appointed junior scientific aid in the division of textiles on October 15, 1934.

Three Museum employees were transferred from the active to the retired list, as follows: Philip N. Wisner, assistant clerk, on November 30, 1934, through disability; Mrs. Amelia Turner, under photographer, on June 30, 1935, through section 8 (a) of the Economy Act; and Mrs. Rachel Turner, charwoman, on August 31, 1934, through age.

Necrology.—The Museum lost through death 2 of its honorary staff members and 7 of its active workers, as follows: Dr. Albert Mann, honorary custodian of diatoms since January 8, 1913, who died on February 1, 1935; Dr. David White, honorary associate curator of paleobotany since May 23, 1905, who died February 7, 1935; Peter Hanson, machinist, who died on March 6, 1935; Frank W. Mullen, electrician's helper, on February 18, 1935; Michael Colohan, John J. Gallagher, and Harrison M. Kinnison, guards, on July 11, 1934, December 9, 1934, and June 4, 1935, respectively; Mrs. Marie Ellis, charwoman, on March 29, 1935; and Mrs. Lula Bryant, attendant, on April 16, 1935.

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 the following report on the activities of the National Gallery of Art for the fiscal year ended June 30, 1935:

In the past 12 months several events have taken place which may have a bearing on the future of the National Gallery of Art, and so it will be of interest to record them here.

The press has reported that the Mellon Foundation may locate in Washington a gallery of art to house the Mellon collection of paintings as well as other masterpieces. The details of the foundation and its relation to the National Gallery of Art have not been definitely decided.

Senator David I. Walsh, of Massachusetts, introduced into the Senate a bill which may lead to the formation of a National Portrait Gallery under the direction of the Smithsonian Institution.

Representative William I. Sirovich, of New York, Chairman of the Committee on Patents, held extensive hearings on House Joint Resolution No. 220, which relates to the proposed formation of a new Government department to be called the "Department of Science, Art, and Literature."

The Government has placed artists in the Citizens Conservation Corps camps to record their activities. It has also awarded many contracts for the decoration of Government buildings throughout the United States.

These events show that there is a widespread interest in art in our country and raise the hope that the Government will sooner or later provide a building where the works of art in its possession can be properly shown. Collectors as a rule want their treasures in some permanent museum, and would be attracted by the high standing of a national gallery comparable to those of the European countries. Seldom are collectors able to do as did Mr. Freer—furnish the material, the building, and also the money for its upkeep, so that the Freer Gallery is an almost independent unit under the direction of the Smithsonian Institution. Many collectors, when they shall see a proper building for the National Gallery of Art, and the material in it properly cared for, will feel that they have found the most suitable

place to give their collections. But without a building, with no room to expand, our collections must stand still.

APPROPRIATIONS

For the administration of the National Gallery of Art 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, \$32,768 was appropriated.

THE NATIONAL GALLERY OF ART COMMISSION

The fourteenth annual meeting of the National Gallery of Art Commission was held at the Smithsonian Institution on December 11, 1934. The members present were: Dr. Charles G. Abbot, Secretary of the Smithsonian Institution, who is ex-officio member and also the secretary of the Commission; Frank Jewett Mather, Jr., vice chairman; Herbert Adams; Gifford Beal; Charles L. Borie, Jr.; James E. Fraser; Frederick P. Keppel; John E. Lodge; George B. McClellan; Charles Moore; Edmund C. Tarbell; 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 Gallery of Art, was also present.

The Commission recommended to the Board of Regents the reelection for the succeeding term of 4 years of the following members: Herbert Adams, Gifford Beal, and Charles Moore.

The following officers were re-elected for the ensuing year: Joseph H. Gest, chairman; Frank Jewett Mather, Jr., vice chairman; and Dr. Charles G. Abbot, secretary; as well as the members of the executive committee: Charles Moore, Herbert Adams, and George B. McClellan. Joseph H. Gest, as chairman of the Commission, and Dr. Charles G. Abbot, as secretary of the Commission, are ex-officio members.

The following resolution was adopted as an expression of the Commission's general policy in connection with gifts or bequests offered with certain undesirable restrictions:

Resolved, That it is the recommendation of the National Gallery of Art Commission that the Smithsonian Institution do not in general accept for the National Gallery of Art gifts or bequests of miscellaneous collections of objects of art when a condition is attached thereto that the objects must be exhibited in perpetuity.

[Joseph H. Gest, chairman of the National Gallery of Art Commission, died on June 26, 1935, at Cincinnati, Ohio.]

ART WORKS RECEIVED DURING THE YEAR

Accessions of art works by the Smithsonian Institution are as follows:

Two portraits by George Peter Alexander Healy (1808–1894), of Gen. William Tecumseh Sherman, 1866, Regent of the Smithsonian Institution in 1871 and 1878; and of Mrs. William Tecumseh Sherman (Ellen Boyle Ewing Sherman), 1868. Presented by their son, P. Tecumseh Sherman, of New York, N. Y. (Accepted for the National Portrait Gallery.)

Two portraits by Jean Joseph Benjamin-Constant (1845–1902), of the Honorable John B. Henderson, Regent of the Institution from 1892–1911, and of Mrs. Henderson (Mary Newton Foote Henderson). Gift of the heirs of Mrs. Mary F. Henderson through Dr. Charles Moore.

Three paintings by Georg Ernst Fischer (1815–1874): "American Country Life, about 1860", "Cupids", "Gratitude", and a plaque of Francis Davis Millet (1846–1912) at the age of 32, dated Paris, March 1879, by Augustus Saint Gaudens. Gift of Ernst G. Fischer, of Washington, D. C.

Portrait of His Majesty King George V of Great Britain, by Frank O. Salisbury. Presented to President Franklin Delano Roosevelt for the American Nation by the artist in commemoration of the valiant service rendered by the Republic of the United States of America and the British Empire in behalf of justice and peace. May 6, 1935. Jubilee Year. Accepted by President Roosevelt at special presentation exercises, July 11, 1935, at the White House.

A peachblow vase, product of the K'Ang-hsi period, presented to the Government of the United States for the National Museum by the Imperial Chinese Government in 1908, was transferred by the Museum to the National Gallery of Art.

THE CATHERINE WALDEN MYER FUND

Two Early American miniatures were acquired from the fund established through the bequest of the late Catherine Walden Myer—a fund for the purchase of first-class works of art for the use and benefit of the National Gallery of Art, as follows:

"Portrait of Jane Stone", by Benjamin Trott (about 1770–1839); from Miss Marion Lane, of Washington, D. C.

"Portrait of Judge Thomas Waties" (born in Georgetown, S. C., in 1760), by Charles Fraser (1782–1860); from Miss Marie R. Waties, of Washington, D. C. (A loan from Miss Waties during the last fiscal year.)

LOANS ACCEPTED BY THE GALLERY

Portraits by Henry Inman (1801-1846) of Col. Robert Charles Wetmore and of his wife, Adeline Geer Wetmore, bequeathed to the United States National Museum by Florence Adele Wetmore, late of New London, Conn. Lent by the United States National Museum.

A pair of Meissen vases, 23½ inches high. Lent by Mr. and Mrs. J. D. Patten, of Du Bois, Pa.

Three small bronzes by A. L. Barye (1796-1875), as follows: "Panther Surprising Civet Cat", "Stork on Tortoise", and "Seated Hare." Lent by Leonard C. Gunnell, of the Smithsonian Institution.

Two pastel portraits in profile by James Sharples (about 1751-1811), of Gen. George Washington and of Martha Washington. These were the property of Washington and hung originally in Mount Vernon. Lent by Mrs. Robert E. Lee, of Washington, D. C., Dr. George Bolling Lee, of New York, N. Y., Mrs. Hanson E. Ely, Jr., of Washington, D. C., and Mrs. William Hunter de Butts, of Upperville, Va.

Bronze group by Herbert Haseltine, 1920, entitled "Field Artillery." Lent by the Honorable Robert Woods Bliss, Washington, D. C.

An oil painting (one side of a diptych) by Gabrielle DeV. Clements, entitled "An Angel." Lent by the artist, and withdrawn by her before the close of the year.

A collection of 8 miniatures, 2 silver snuff boxes, a watch, a mourning ring, and a portrait ring. "The Theodosia Lawrence Barnard Talcott Collection", lent by Miss Lucia B. Hollerith, of Washington, D. C.

Six miniatures of the Shippen family as follows: Rebecca Lloyd (1785 or 1787), attributed to Richard Cosway (1740-1821); Jane Gray Wall, by John Francis Burrell, London (about 1800); Ann Hume Shippen, attributed to Benjamin Trott (about 1770-1839); Mrs. Thomas Lee Shippen, signed Bridport; Thomas Lee Shippen, by James Peale—signed I. P. and dated 1793; William Shippen, by James Peale—signed I. P. and dated 1794. Lent by Dr. Lloyd P. Shippen, of Washington, D. C.

GALLERY LOANS RETURNED

The "Portrait of Mrs. Price", by William Hogarth, lent to the Art Institute of Chicago for "A Century of Progress Loan Exhibition of Fine Arts", from June 1 to October 31, 1934, was returned to the gallery on November 9, 1934.

Sixteen bound volumes: "Random Records of a Lifetime Devoted to Science and Art, 1846-1932", by W. H. Holmes, consisting of

letters, manuscripts, photographs, drawings, and sketches, compiled and presented to the National Gallery library by Dr. Holmes, but retained by him for additions when he retired from Government service, were returned by his family during the year.

LOANS BY THE GALLERY TO OTHER INSTITUTIONS

Five paintings by contemporary American artists, from the William T. Evans collection, were lent to the M. H. de Young Memorial Museum of San Francisco, Calif., for an important exhibition of American paintings from the eighteenth century to the present day, held from June 7 to July 7, 1935, as follows: "Moonrise", by Ralph Albert Blakelock; "September Afternoon", by George Inness; "High Cliff, Coast of Maine", by Winslow Homer; "Moonlight", by Albert Pinkham Ryder; and "Caresse Infantine", by Mary Cassatt. (These paintings have been returned to the National Gallery.)

Five portraits were lent to the Public Library of the District of Columbia for exhibition in the central library from June 18, 1935, for 6 months, as follows: "John Tyler", by G. P. A. Healy; "A Lady", by Gilbert Stuart; "Col. Robert Charles Wetmore", by Henry Inman; "Andrew Jackson", by Rembrandt Peale; and "Commodore Stephen Decatur", by Gilbert Stuart.

WITHDRAWALS BY OWNERS

Seven pieces of Early English, Irish, and American silver, received as a loan on June 23, 1934, from Mrs. George Morris, Washington, D. C., were withdrawn by the owner on October 10, 1934.

The portrait of Thomas Amory, by Gilbert Stuart, formerly the property of Mrs. O. H. Ernst, was delivered at Mrs. Ernst's direction on November 6, 1934, to her daughter, Mrs. William Grinnell, of New York, N. Y., the present owner.

SPECIAL EXHIBITIONS

Seven exhibitions were held in the foyer of the Natural History Building of the United States National Museum, as follows:

July 6 to August 31, 1934.—Water colors and black-and-white drawings (114) by Clayton Knight, made during a 20,000-mile journey by air over South America, the West Indies, and Central America. Cards were issued by the Gallery, and a seven-page catalog furnished by the exhibitor.

January 10 to 31, 1935.—Water-color studies (30) of Mexico and Massachusetts, made during the summers of 1934 and 1933, by Alexander Trowbridge. Cards were issued by the Gallery, and a folder-catalog supplied by the exhibitor.

January 10 to 31, 1935.—Oil paintings (56) by Emil Jacques, instructor in the art department of the University of Notre Dame, Indiana. Cards were issued by the Gallery and folder-catalogs supplied by the exhibitor.

February 14 to March 15, 1935.—Forty lithographs of Boulder Dam by William Woollett, architect. No catalogs were provided, each specimen being plainly labeled.

April 4 to 30, 1935.—Oil paintings and water colors by the Misses Elena and Bertha de Hellebranth, exhibited under the patronage of His Excellency the Minister of Hungary, John Pelenyi. Cards were issued by the Gallery and folder-catalogs furnished by the exhibitors.

May 2 to 31, 1935.—Exhibition of pastel studies (65) of Egyptian peasant types, by Howard Fremont Stratton, under the patronage of His Excellency Ibrahim Ratib Bey, E. E. and M. P. of His Majesty the King of Egypt, and others. Cards were issued by the Gallery, but no catalogs were furnished, each specimen being plainly labeled.

June 4 to 20, 1935.—Oil paintings, water colors, and drawings by artists enrolled in the Civilian Conservation Corps camps were shown under the direction of the Director of Emergency Conservation Work and members of his Advisory Council.

THE NATIONAL GALLERY REFERENCE LIBRARY

The library now comprises over 4,500 publications, accessions for the year amounting to 568, acquired by gift, exchange, and purchase. Books totaling 773, in addition to 1,162 parts of publications, were transferred from the section of administration of the United States National Museum to form part of the National Gallery Library when cataloged.

SPECIAL ACTIVITIES

The acting director visited various museums throughout the country for the purpose of studying their collections as follows:

A visit was made (July 27 to Aug. 24, 1934) to Philadelphia, Princeton, Newark, and to practically all the public art collections in New England, from New Haven, Conn., to Brunswick, Maine, to Burlington, Vt., and down the Connecticut Valley back to New Haven.

A special exhibition of 50 paintings by Frans Hals was visited at the Detroit Institute of Art, Detroit, Mich., in February 1935.

The opportunity was taken to visit and study the exhibition of miniatures, the product of the leading painters of the eighteenth and

nineteenth centuries, shown at the Gibbes Memorial Art Gallery, Charleston, S. C., February and March 1935.

Glass, and the making of glass, at the Corning Glass Works, Corning, N. Y., were studied in June 1935, in connection with the work of John Northwood, of which the National Gallery has a fine example in the John Gellatly Collection.

PUBLICATIONS

TOLMAN, R. P. Report on the National Gallery of Art for the year ending June 30, 1934. Appendix 2, Report of the Secretary of the Smithsonian Institution for the year ending June 30, 1934, pp. 23-28.

————— The technique of Charles Fraser, miniaturist. Part I. Antiques, vol. 27, no. 1, pp. 19-21, 11 ills., Jan. 1935. Part II. Antiques, vol. 27, no. 2, pp. 60-62, 12 ills., Feb. 1935.

LODGE, J. E. Report on the Freer Gallery of Art for the year ending June 30, 1934. Appendix 3, Report of the Secretary of the Smithsonian Institution for the year ending June 30, 1934, pp. 29-32.

CATALOG: Water colors and black and white drawings by Clayton Knight. Made during a 20,000-mile journey by air over South America, the West Indies, and Central America. July 6-Aug. 31, 1934. National Gallery of Art, Smithsonian Institution, Washington, D. C., 7 pp. Privately printed.

CATALOG: Smithsonian Institution, National Gallery of Art, Washington. Exhibition of oil paintings by Emil Jacques. From Thursday, January 10 until Thursday, January 31, inclusive, 1935. 4-page leaflet, privately printed.

CATALOG: Water Color Studies of Mexico and Massachusetts made during the summers of 1934 and 1933 by Alexander Trowbridge. January 10 to January 31, inclusive, 1935. National Gallery of Art, Smithsonian Institution, Washington, D. C. Leaflet of 3 pp. Privately printed.

CATALOG: Exhibition of Paintings by Bertha de Hellebranth and Elena de Hellebranth. Sponsored by His Excellency John Pelényi, the Minister of Hungary, at the United States National Museum, National Gallery of Art, Washington, D. C., April 4-30, 1935. 3-page leaflet, privately printed.

Respectfully submitted.

R. P. TOLMAN, *Acting Director.*

Dr. C. G. ABBOT,

Secretary, Smithsonian Institution.

APPENDIX 3

REPORT ON THE FREER GALLERY OF ART

SIR: I have the honor to submit the fifteenth annual report on the Freer Gallery of Art, for the year ended June 30, 1935:

THE COLLECTIONS

Additions to the collections by purchase are as follows:

BRONZE

- 35.12. Chinese, Chou period. A ceremonial covered vessel of the type *chia*, with four legs and three handles. The surface is decorated with designs in delicate low relief; a bird finial on the cover. Green patina. Inscription inside. Height, 0.407 over all. (Illustrated.)
- 35.6. Chinese, T'ang period. A miniature mirror with scalloped edge, its back inlaid with sheet gold having concentric designs of running animals, 6-petaled rosettes, and a scroll pattern executed, respectively, in high, medium, and low relief. Diameter, 0.055.
- 35.13. Chinese, Han or earlier. A mirror, with a glossy mottled black and gray patina and malachite encrustations. Decoration: A landscape with groups of people and animals in sharply cut low relief repeated four times; ornamented knob. Diameter, 0.184. (Illustrated.)
- 35.14. Chinese, Han or earlier. A mirror (one repair) with a glossy black patina and patches of azure. Decoration: A scroll pattern in sharply cut relief on a bed of fret work. Diameter, 0.233. (Illustrated.)

CERAMICS

- 34.22. Chinese, T'ang dynasty. Mortuary pottery: A long-necked flask; the belly decorated with an incised design of lotus flowers and foliage, the whole glazed with green, yellow, and cream color; the surface now largely iridescent. 0.252 by 0.136.
- 35.3. Chinese, Sung dynasty. *Lung-ch'üan yao*: A tea bowl, covered with a lustrous celadon glaze. 0.052 by 0.138.
- 35.4. Chinese, Sung dynasty. *Kuan yao*: A round covered box with a celadon glaze of brilliant luster. Decoration: A floral design in relief under the glaze. 0.028 by 0.093.
- 35.5. Chinese, Ming dynasty. A pottery bowl glazed in brilliant blue; decorated with incised line drawing under the glaze. Mark, Chêng Tê (1506-1521). 0.056 by 0.117.

GLASS

- 35.15-35.16. Syrian (Christian), late fourth century. A pair of altar cruets, each one 6-sided with trefoil lip and hollow handle. Dark brown, translucent blown glass with areas of partial disintegration appearing in cream-colored flecking and brilliant iridescence. Decoration: Early Christian symbols in counter-sunk relief. 0.162 by 0.094; 0.157 by 0.101.

JADE

- 35.7. Chinese, Chou period. A badge of rank of the type *kuei*. Color: Deep cream and soft light brown, with a few streaks of darker brown. 0.175 by 0.040 by 0.012.

MANUSCRIPTS

- 34.24-34.28. Arabic (North Africa), twelfth century. Bound volume of a portion of the *Qur'ān*; parchment. Written in *maghribī* script in dark brown ink; orthographical signs in red, blue, and yellow; illuminated lectionary marks. Four pages illuminated in gold (34.25-34.28). 0.165 by 0.115.
- 35.18. Persian, sixteenth century (A. D. 1546). Bound book; *Gūy u-Chawgān* (The Ball and the Polo-mallet) by Ārifī of Herāt; calligrapher, Shāh Mahmūd Nishāpūri. Text in *nasta'liq* script. Two illustrations (see below under Paintings: 35.19, 35.20).

PAINTINGS

- 35.8. Chinese, Sung period. Women bathing and dressing children: An album picture. Painted in full color on a fan-shaped piece of silk; 10 seals on the painting. 0.227 by 0.244. (Illustrated.)
- 35.9. Chinese, Sung period. Two women with attendants: An album picture. Painted in full color on a fan-shaped piece of silk; 11 seals on the painting. 0.227 by 0.244. (Illustrated.)
- 35.10. Chinese, twelfth-thirteenth century. Sung period. By Yen Tz'ü-yü. Landscape: An album picture. Painted in ink and tint on silk. Signature and 10 seals on the painting. 0.253 by 0.258. (Illustrated.)
- 35.11. Chinese, tenth-eleventh century. Sung period. Tun-huang type. Kṣitigarbha (Ti-tsang) and one of the Ten Kings of Hell. In the lower register, Vajrasattva and a donor. Painted in full color on silk. 1.064 by 0.582. (Illustrated.)
- 35.17. Chinese, Sung period. By Mi Yu-jên (1086-1165). "Wooded hills and autumn mists." Painted in ink monochrome. Title, signature, and 14 seals on the painting. Paper *makimono*, 0.23 by 2.319.
- 35.2. Indian, A. D. 1600, or earlier. Rājput, Rājasthānī. Kriṣṇā and Rādhā. Painted on paper in solid colors and slight gold. 0.205 by 0.157. (Illustrated.)
- 35.19-25.20. Persian, sixteenth century (A. D. 1546). Ṣafawid period. Two illustrations from the manuscript book of *Gūy u-Chawgān* (35.18; see above). Painted in colors and gold on paper:
 (a) A polo game, 0.194 by 0.123. (Illustrated.)
 (b) Scene in a polo field, 0.195 by 0.123. (Illustrated.)

SILVER

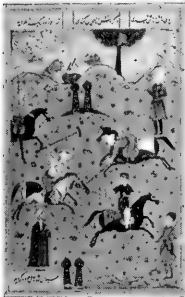
- 34.23. Persian, fourth century. Sāsānian period. A memorial plate, decorated with the figure of Sapor II (A. D. 309-380) on horseback hunting wild boar, executed in applied hollow relief, gilded. Diameter, 0.24. (Illustrated.)

WOOD-CARVING

- 35.1. Arabic (Persia), late eleventh century. Seldjūk period. One leaf of a double door (repaired; four patches). Decoration consisting of inscriptions in ornamented *kūfic* script, cut in counter-sunk relief to a depth of 0.019. 1.440 by 0.483 by 0.05. (Illustrated.)



34.23



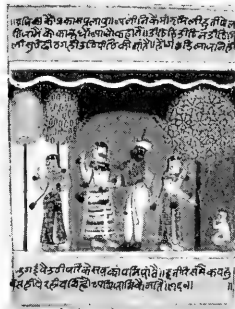
35.19



35.1

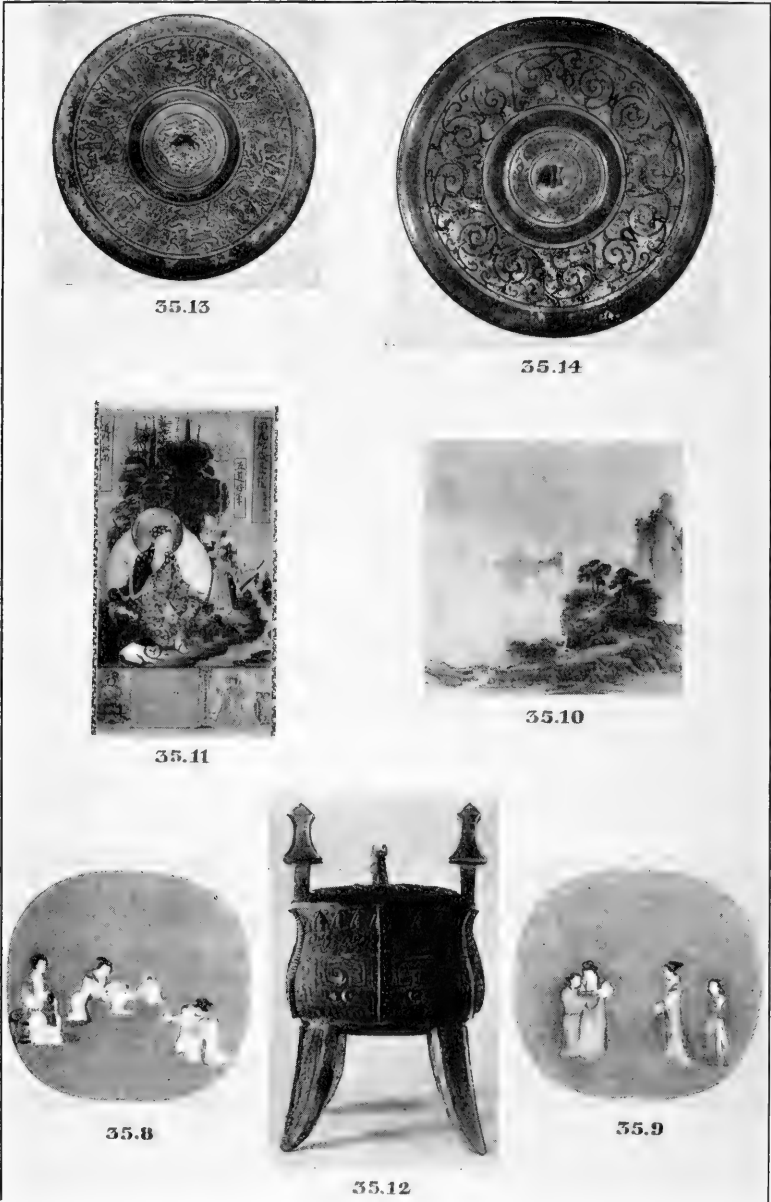


35.20



35.2

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



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

Curatorial work within the collection has been devoted to the study of Chinese, Japanese, Armenian, Arabic, and Persian objects, and of the texts and seals associated with them, including those newly acquired; also to the examination of objects submitted to the curator by other institutions or by private owners for an opinion as to their identity, their meaning, or their historic or esthetic value. A total of 1,268 objects and 153 photographs of objects were examined in this way and written or oral reports were made upon them. Also, 14 texts were submitted for translation.

Changes in exhibition have involved a total of 190 objects, as follows:

Book-bindings	6
Bronzes, Chinese.....	11
Glass, Syrian.....	7
Manuscripts	9
Paintings, American.....	78
Paintings, Chinese.....	6
Paintings, Indian.....	6
Paintings, Japanese.....	18
Paintings, Persian.....	9
Pottery, Chinese.....	19
Pottery, Persian.....	15
Silver, Persian.....	1
Stone sculpture, Chinese.....	4
Wood-carving, Persian.....	1

The special exhibition of Whistler's work installed on May 14, 1934, in honor of the Whistler Centenary, was taken down on December 26.

ATTENDANCE

The Gallery has been open 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 130,323. The total attendance for week days, exclusive of Mondays, was 86,754; for Sundays, 43,569. The average Sunday attendance was 837, the average week-day attendance 335, a ratio of 2½ to 1. As always, the highest monthly attendance was reached in April (26,323) and August (13,296). The lowest monthly attendance was in December (5,576).

The total attendance of visitors on Mondays, by the south entrance, was 23, making a grand total attendance of 130,346.

There were 1,734 visitors to the offices during the year. The purposes of their visits were as follows:

For general information.....	315
To see objects in storage.....	304
Far Eastern paintings.....	106
Near Eastern paintings.....	19
American paintings.....	63
Whistler etchings.....	6
Oriental pottery, bronzes, sculptures, jades.....	110
To examine building and installation.....	36
To read in the library.....	260
To see Biblical manuscripts.....	44
To make tracings and sketches from library books.....	29
To obtain permission to photograph or sketch.....	10
To examine or purchase photographs.....	371
To submit objects for examination.....	119
To see members of the staff.....	234

DOCENT SERVICE

Seventy-eight groups ranging from 1 to 40 persons (total 447) were given docent service in the exhibition galleries upon request (of these, 6 groups totaling 11 persons, on Mondays). Sixteen groups ranging from 11 to 18 persons (total 221) were given instruction in the study rooms.

AUDITORIUM

The following groups have held meetings in the Auditorium:

October 27, 1934: Teachers of art in the Public Schools of the District of Columbia, and students. Attendance 200.

May 24, 1935: The technical section of the American Association of Museums. Attendance 15.

PERSONNEL

Mr. and Mrs. Carl W. Bishop returned to the Gallery on November 7, 1934.

Grace T. Whitney worked intermittently at the Gallery between October 10, 1934, and June 24, 1935, on translation of Arabic and Persian texts.

Grace Aasen Parler, librarian, was permanently transferred from the Smithsonian Library to the Freer Gallery Library on January 1, 1935.

Walter McCree, laborer, was permanently appointed to succeed John Pinkney, July 1, 1934.

Respectfully submitted.

J. E. LODGE, *Curator.*

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

APPENDIX 4

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, 1935, conducted in accordance with the act of Congress of March 28, 1934. The act referred to contains the following item:

American ethnology: For continuing ethnological researches among the American Indians and the natives of Hawaii, the excavation and preservation of archeologic remains under the direction of the Smithsonian Institution, including necessary employees, the preparation of manuscripts, drawings, and illustrations, the purchase of books and periodicals, and traveling expenses, \$52,910.00.

SYSTEMATIC RESEARCHES

M. W. Stirling, Chief, left Washington on October 23, 1934, to investigate the location of finds of the eastern type of Folsom point in King and Queen and Halifax Counties, Va., and in Granville County, N. C. It was discovered that the points in question were all surface finds, the exact location of several being examined. Two interesting facts developed from this study: None of the Folsomlike points was found in connection with village site material, and all of them were recovered from hilltop fields or other elevations where erosion had removed the topsoil. Until finds are made in situ, and in association with other material, very little can be said as to the antiquity of the specimens beyond the fact that they appear to be earlier than the ceramic horizons in the same region.

On January 18, 1935, Mr. Stirling arrived at San Jose, Guatemala, from which point he visited archeological sites on the Pacific Coastal Plain. Proceeding to the highlands of Guatemala, he visited several Maya Quiche villages in the vicinity of Lake Atitlan and Chichicastenango. Subsequently he studied the old empire ruins of Quirigua on the Motagua River and Copan in Honduras. After returning to Guatemala from Honduras, Mr. Stirling proceeded to Yucatan, where he spent a week as a guest of the Carnegie Institution in viewing the sites of Uxmal and Chichen Itza. On February 12 he returned to Washington.

On June 18 Mr. Stirling left Washington for Macon, Ga., to examine the progress made by Dr. A. R. Kelly on the large-scale mound excavations near that city. From Macon Mr. Stirling proceeded to Brunswick, Ga., to view some of the archeological sites on

the Sea Islands and to consult with National Park Service officials regarding the establishment of archeological monuments in that area. From Brunswick he went to Manatee, Fla., to examine some interesting Calusa material discovered by Montague Tallant. Following this, a brief trip was made to Cape Sable and the Florida Keys to locate some of the southernmost examples of Calusa archeological sites. On the return trip to Washington, he spent 2 days at Tallahassee, Fla., in consultation with Vernon Lamme, Florida State Archeologist, and visited several interesting sites in the vicinity.

Dr. John R. Swanton, ethnologist, devoted a considerable part of the year to the amplification of his report on the Southeastern Indians, material being added from Spanish, French, and English sources.

In November and the first week of December, Dr. Swanton, accompanied by F. M. Setzler, assistant curator of archeology in the United States National Museum, visited Macon, Ga., as the guests of Dr. and Mrs. Charles C. Harrold, stopping on the way at various points in North Carolina to examine archeological collections and sites connected with the expedition of De Soto. They remained in Atlanta, at the invitation of Mr. and Mrs. Beverly M. Du Bose, long enough to view the famous Etowah mounds at Cartersville. Besides visiting several sites in the immediate neighborhood of Macon, they made a trip to Panama City, Fla., and with the helpful cooperation of Judge Ira A. Hutchinson of that place viewed many of the sites explored by Clarence B. Moore and obtained an excellent collection of potsherds from one of the large shell heaps. On the return trip to Washington productive attempts were made to identify sites visited by De Soto in both North and South Carolina. Lectures were delivered at Macon and also at Emory University, Atlanta, before those interested in the local archeology.

During the last week in December, Dr. Swanton took part in a conference on the prehistory of the lower Mississippi Valley at Baton Rouge, La., and on his way back spent some time visiting Indian sites along Alabama River with James Y. Brame, Jr., of Montgomery, Ala.

Shortly before the end of the year Dr. Swanton took up again his work on the Timucua linguistic material, which had been laid aside for some time. Timucua is no longer spoken, and, with the exception of two letters and some isolated words, all that is known regarding it is contained in five early seventeenth-century religious works published by the Franciscan friars Pareja and Movilla, with a grammar by the former.

At the beginning of the year Dr. Truman Michelson, ethnologist, was engaged in working out the phonetic shifts of Natick on the basis of the material contained in Trumbull's Dictionary. With

very few exceptions these are now satisfactorily solved, and have been indexed on file cards. When a few remaining obscure points are elucidated it will be possible to present a complete paper for publication. During the year a number of technical papers were prepared for publication in certain professional periodicals. Among these is a series of papers solving certain difficulties in Algonquian sound-shifts and etymologies as well as showing that some sound-shifts took place in Proto-Algonquian times. An article on Winnebago social and political organization should also be noted. The data extracted from Caleb Atwater's writings, previously neglected, are important. A new technique of determining the gentes of some tribes at certain times is given. Since gentes often own personal names, it is clear that personal names occurring as the signers of treaties and in early documents can be utilized in determining the gentes. Of general ethnological interest will be Dr. Michelson's communication, shortly to be published in the *American Anthropologist*, on Miss Owen's Folk-Lore of the Musquakie Indians. Since the book deals with the Musquakie Indians, we have a right to suppose that the Indian words cited are Musquakie. However, Dr. Michelson shows that several are not even Algonquian but Siouan. Dr. Michelson has prepared and submitted for publication two papers: "Further Notes on Algonquian Kinship Terms" and "What Happened to Green Bear Who Was Blessed with a Sacred Pack."

Dr. John P. Harrington, ethnologist, continued during the year his researches on the Indians of California and other related western Indians, both in the field and in Washington. At the beginning of the year he was engaged in work in southern California with an aged Indian, reviewing with him the ethnology contained in Father Boscana's unique report on the culture of the southern California coast Indians written in 1822, the manuscript of which Dr. Harrington recently discovered. The rehearing and annotating of this important manuscript was continued with other informants until well into the fall, resulting in the elucidating of practically every passage of the old text. On the completion of this work Dr. Harrington returned to Washington, D. C., to continue the annotation of the Boscana manuscript. Owing to the presence of Mission Indians in the city of Washington during all the latter part of the year, as delegates in connection with legislative work, Dr. Harrington availed himself of this opportunity to amplify the work. Legends and other materials from these Indians were reheard, discussed, and edited. This work was still in continuation on June 30.

Dr. Frank H. H. Roberts, Jr., archeologist, devoted considerable time during the year to a study of the problem of so-called Folsom man. Extensive correspondence was carried on with collectors

throughout the country concerning their finds of Folsom points and many examples were sent to him for study, photographing, and measuring. As a result of this work much new information was obtained concerning variations in this peculiar type of projectile point and its distribution.

Dr. Roberts left Washington September 23, 1934, for Fort Collins, Colo., to investigate a site which had been reported to the Smithsonian Institution by Maj. Roy G. Coffin, professor of geology in Colorado State College. The site was discovered in 1924 by Judge C. C. Coffin and his son, A. L. Coffin, of Fort Collins. Among the specimens were points which later were identified as belonging to the Folsom type, the oldest thus far known in North America. Dr. Roberts spent 6 weeks exploring the site, with the permission of the owner of the land, William Lindenmeier, Jr., of Fort Collins. From an intact midden layer 14 feet below the present ground level, and a quarter of a mile distant from the place of the original finds by the Coffins, he procured a whole series of implements which definitely establish a complex for the Folsom horizon.

Dr. Roberts returned to Washington November 20, 1934, and during the winter months prepared a manuscript detailing the results of his work. This paper, entitled "A Folsom Complex: Preliminary Report on Investigations at the Lindenmeier Site in Northern Colorado", was published June 20, 1935, in the Smithsonian Miscellaneous Collections, vol. 94, no. 4, publ. no. 3333.

Dr. Roberts left Washington again for Fort Collins on May 26. A camp was established at the Lindenmeier site and excavations on a larger scale than those of the preceding autumn were begun. The digging yielded numerous specimens of stone implements and a considerable quantity of bison bones, indicating that they are from much larger animals than the modern bison. A number of stone implements were found in direct association with these bones, and one vertebra contains the tip end from a typical Folsom point.

While the work at the Lindenmeier site was progressing, Dr. Roberts visited a number of locations in the northern Colorado area where Folsom specimens have been found. None of the latter indicated possibilities for increased knowledge on the subject comparable to those at the Lindenmeier site.

During the month spent in the office Dr. Roberts also worked on manuscripts detailing the results of archeological work conducted in Arizona and at Shiloh National Military Park, Tenn.

From July to October 1934, Dr. W. D. Strong, ethnologist, was in Washington working with the collections made in Spanish Honduras during the preceding years. During the year a report on one phase of this work, entitled "Archeological Investigations in the Bay Islands, Spanish Honduras", was completed. It was published Feb-

ruary 12, 1935, in the Smithsonian Miscellaneous Collections, vol. 92, no. 14. In October 1934 Dr. Strong was sent to Fort Collins, Colo., to examine and assist in work at a newly discovered site where a habitation level occupied by Folsom man was being investigated by Dr. F. H. H. Roberts, Jr., of the Bureau of American Ethnology. Returning to Washington in the same month, he was occupied for some time in revising and amplifying an earlier report, "An Introduction to Nebraska Archeology", which was completed and went to press March 1, 1935. From December 1934 until the end of the year, Dr. Strong served as an adviser in anthropology to the Bureau of Indian Affairs. Prior to May 1934 this work was carried on in addition to his other duties but, subsequent to that time, through an arrangement between the Bureau of American Ethnology and the Bureau of Indian Affairs, full time was devoted to this task.

Winslow M. Walker, associate anthropologist, devoted the time from July 1 until the end of the calendar year in working with the collections made in connection with the Federal Civil Works Administration relief project at Buena Vista Lake, Calif. At the same time Mr. Walker was able to continue work in connection with his researches in the lower Mississippi Valley, and completed for publication the report of his work on the large mound at Troyville, La.

J. N. B. Hewitt, ethnologist, was engaged during the year in a revision of the native Onondaga text of the Requickening Address of the Condolence Convocation of the Iroquois League, adding to the text and translation the summarizing speech introductory to the Second Part of this Address, retranslating the whole. He also revised the historical tradition of the founding of the League of the Iroquois, not only words but incidents as well, retranslating the whole to conform to the corrections. Texts of laws relating to other aspects of the League were also revised and made to conform to later information obtained in his researches.

Mr. Hewitt worked on the preparation of a paper analyzing approximately 400 Chippewa place names. He also prepared a list of over 200 Seneca personal names arranged according to the age grades of the individual.

In the course of the year Mr. Hewitt attended the meetings of the Advisory Committee to the Division of Geographic Names of the Department of the Interior, for which he also did some research work.

SPECIAL RESEARCHES

Miss Frances Densmore, a collaborator of the Bureau, continued her study of Indian music during this year, submitting disk records of Indian songs made at the Century of Progress Exposition. The records of seven songs were submitted, with transcriptions of two

Navaho and four Sioux songs, and accompanying data. These have been cataloged consecutively with her former work. Two of the Sioux songs were selected by Dean Carl E. Seashore for graphic reproduction by his method of phonophotography, the work being done at his laboratory at the University of Iowa, Iowa City. This is the first use of this technique of graphical recording in connection with the study of Indian music. Dr. Seashore states: "From a single playing before the microphone three groups of records are made: First, a re-recording of the song on hard disks for auditory reference; second, a phonophotographic record of pitch, intensity and time; and, third, an oscillogram for harmonic analysis to determine tone quality." Through his courtesy there was submitted a print of a portion of the original phonophotogram of one of these songs, and a graph, or "pattern score" made by Dr. Harold Seashore from the phonophotogram. A comparison of this score with the transcription made by Miss Densmore corroborates the evidence of the ear in discerning the pitch of Indian singing and also opens interesting new avenues of investigation. Miss Densmore added a chapter on a summary of analysis to her book on British Columbian music, awaiting publication.

Acknowledgment is made of the courtesy of Mrs. Laura Boulton and Dr. George Herzog in providing the use of the Fairchild disk recording apparatus on which Indian songs were recorded at the Century of Progress Exposition.

EDITORIAL WORK AND PUBLICATIONS

The editing of the publications of the Bureau was continued through the year by Stanley Searles, editor. In addition to the current work of the office, considerable progress was made on comparing and correcting the comprehensive manuscript index of Bulletins 1-100 of the Bureau. Every entry is being verified.

An index of Schoolcraft's work entitled "Indian Tribes", in six volumes, begun last year, is well advanced.

Bulletin 112, "An Introduction to Pawnee Archeology", by Waldo Rudolph Wedel, was edited and prepared for printing; and work has been done on other manuscripts in the custody of the editor. Publications distributed totaled 11,955.

LIBRARY

The reference library has continued under the care of Miss Ella Leary, librarian. The library consists of 31,101 volumes, 17,189 pamphlets, and several thousand unbound periodicals. During the year 400 books were accessioned, of which 47 were acquired by purchase, the remainder being received through gift and exchange of Bureau publications; also 94 pamphlets and 3,125 serials, chiefly

the publications of learned societies, were received and recorded. Books loaned during the year numbered 1,069. In the process of cataloging, 1,550 cards were added to the catalog files. Requisition was made on the Library of Congress during the year for 140 volumes for official use. This year, more than in previous years, advantage was taken of the interlibrary loan service for books needed by the staff.

As usual, hundreds of publications were consulted in the library during the year by investigators and students, other than members of the Smithsonian Institution. Individual contributors both at home and abroad continued to show their interest by sending contributions to the library.

ILLUSTRATIONS

Following is a summary of work accomplished by E. G. Cassedy, illustrator:

Engrossing -----	1
Line drawings -----	115
Graphs -----	43
Photographs retouched -----	68
Maps -----	29
Tracings -----	17
Lettering jobs -----	147
Plates prepared -----	97
Photographs colored -----	21
Mechanical drawings -----	5
Paintings repaired -----	2
Total -----	545

COLLECTIONS

Accession
Number

130570. Pottery fragments from Weeden Island, Fla., collected by D. L. Reichard (4 specimens).
130576. Human skeletal material obtained through excavations conducted under the Federal Civil Works Administration by W. M. Walker at various sites in California (88 specimens).
132127. Skeletal material excavated from Peachtree Mound at Murphy, N. C. (39 specimens).
132168. Skeletal material obtained in the course of archeological work conducted at Ormond Beach, Fla., during the winter of 1933-34 under the Federal Civil Works Administration (53 specimens).
133314. Collection of archeological material obtained on the mainland of Spanish Honduras and on the adjacent Bay Islands by Dr. W. D. Strong in 1933 (327 specimens).
134994. Skeletal material from Perico Island, Manatee County, Fla., collected by the C. W. A. during the winter of 1933-34 (180 specimens).

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.—The appointment of Winslow M. Walker, associate anthropologist, was terminated May 31, 1935, owing to ill health.

Miss Helen Heitkemper was temporarily appointed as junior stenographer in the absence of Miss Edna Butterbrodt, on furlough.

Respectfully submitted.

M. W. STIRLING, *Chief.*

Dr. C. G. ABBOT,

Secretary, Smithsonian Institution.

APPENDIX 5

REPORT ON THE INTERNATIONAL EXCHANGE SERVICE

SIR: I have the honor to submit the following report on the operations of the International Exchange Service during the fiscal year ended June 30, 1935:

The total appropriation made by Congress for the Service for 1935 was \$41,178, of which amount \$39,692 was included in the regular appropriation act and \$1,486 was allowed for the purpose of restoring the remainder of the 15 percent economy reduction made in salaries a few years ago. The above is an increase of \$2,124 over the amount granted for the exchanges during the fiscal year 1934. The repayments from departmental and other establishments aggregated \$3,616.05, making the total resources available for conducting the Service during the year \$44,794.05.

The total number of packages that passed through the Service during the year was 654,131, a decrease of 21,849. The weight was 560,381 pounds, a decrease of 64,360 pounds.

The publications sent and received are placed under three classes—parliamentary documents, departmental documents, and miscellaneous scientific and literary publications. The number and weight of packages containing the publications coming under these headings are given in the table below.

Class	Packages		Weight	
	Sent	Received	Sent	Received
United States parliamentary documents sent abroad.....	356, 591	-----	<i>Pounds</i> 115, 937	<i>Pounds</i> -----
Publications received in return for parliamentary documents.....	-----	9, 033	-----	25, 838
United States departmental documents sent abroad.....	100, 420	-----	96, 921	-----
Publications received in return for departmental documents.....	-----	6, 925	-----	26, 093
Miscellaneous scientific and literary publications sent abroad.....	140, 405	-----	200, 293	-----
Miscellaneous scientific and literary publications received from abroad for distribution in the United States.....	-----	40, 757	-----	95, 299
Total.....	597, 416	56, 715	413, 151	147, 230
Grand total.....	654, 131		560, 381	

The total number of boxes used in dispatching consignments abroad was 2,187, a decrease of 155 from the preceding year. Of these boxes, 460 were for the foreign depositories of full sets of United States governmental documents and the remainder (1,727) were for distribution to miscellaneous establishments and individuals.

In addition to the packages sent abroad in boxes, 58,873 packages were transmitted directly to their destinations by mail.

In July 1934 a valuable consignment of exchanges, consisting of eight boxes from New South Wales, was destroyed by fire and water on the pier at New York. Five of the boxes contained publications requested by the Institution to complete the collections of official documents of the Government of New South Wales in the Library of Congress. These publications were procured by the Public Library in Sydney, which conducts the Exchange Agency for New South Wales. The Principal Librarian of the Public Library has advised the Institution that he would keep the list of wanted publications in hand and from time to time endeavor again to obtain copies of as many of the documents as are available.

FOREIGN DEPOSITORIES OF GOVERNMENTAL DOCUMENTS

The full set of governmental publications sent to the American Library in Paris has been discontinued, the number of full sets forwarded abroad now being 61. There are 50 depositories of partial sets, making the total number of full and partial sets 111.

Following is a list of full and partial sets of depositories:

DEPOSITORIES OF FULL SIZES

- ARGENTINA:** Ministerio de Relaciones Exteriores, Buenos Aires.
Buenos Aires: Biblioteca de la Universidad Nacional de La Plata, La Plata. (Depository of the Province of Buenos Aires.)
- AUSTRALIA:** Library of the Commonwealth Parliament, 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.
- AUSTRIA:** National-Bibliothek, Wien I.
- BELGIUM:** Bibliothèque Royale, Brussels.
- BRAZIL:** Bibliotheca Nacional, 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 del Congreso, Santiago.
- CHINA:** National Central Library, Nanking.
- COLOMBIA:** Biblioteca Nacional, Bogotá.
- COSTA RICA:** Oficina de Depósito y Canje Internacional de Publicaciones, San José.
- CUBA:** Secretaría de Estado (Asuntos Generales y Canje Internacional), Habana.
- CZECHOSLOVAKIA:** Bibliothèque de l'Assemblée Nationale, Prague.
- DENMARK:** Kongelige Bibliothek, Copenhagen.

- EGYPT:** Bureau des Publications, Ministère des Finances, Cairo.
- ESTONIA:** Riigiraamatukogu (State Library), Tallinn.
- FRANCE:** Bibliothèque Nationale, Paris.
- GERMANY:** Reichstauschstelle im Reichsministerium des Innern, Berlin C 2.
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.
WURTEMBERG: Landesbibliothek, Stuttgart.
- GREAT BRITAIN:**
ENGLAND: British Museum, London.
GLASGOW: City Librarian, Mitchell Library, Glasgow.
LONDON: London School of Economics and Political Science. (Depository of the London County Council.)
- HUNGARY:** A Magyar országyűlés könyvtará, Budapest.
- INDIA:** Imperial Library, Calcutta.
- IRISH FREE STATE:** National Library of Ireland, Dublin.
- ITALY:** Ministero dell'Educazione Nazionale, Rome.
- JAPAN:** Imperial Library of Japan, Tokyo.
- LATVIA:** Bibliothèque d'Etat, Riga.
- LEAGUE OF NATIONS:** Library of the League of Nations, Geneva, Switzerland.
- MEXICO:** Biblioteca Nacional, Mexico, D. F.
- NETHERLANDS:** Royal Library, The Hague.
- NEW ZEALAND:** General Assembly Library, Wellington.
- NORTHERN IRELAND:** H. M. Stationery Office, Belfast.
- NORWAY:** Universitets-Bibliotek, Oslo. (Depository of the Government of Norway.)
- PERU:** Biblioteca Nacional, Lima.
- POLAND:** Bibliothèque Nationale, Warsaw.
- PORTUGAL:** Biblioteca Nacional, Lisbon.
- RUMANIA:** Academia Română, Bucharest.
- SPAIN:** Servicio de Cambio Internacional, Paseo de Recoletos 20, Madrid.
- SWEDEN:** Kungliga Biblioteket, Stockholm.
- SWITZERLAND:** Bibliothèque Centrale Fédérale, Berne.
- TURKEY:** Ministère de l'Instruction Publique, Ankara.
- UNION OF SOUTH AFRICA:** State Library, Pretoria, Transvaal.
- UNION OF SOVIET SOCIALIST REPUBLICS:** State Central Book Chamber, Moscow 4.
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'Éducation, Belgrade.

DEPOSITORIES OF PARTIAL SETS

- AFGHANISTAN:** Ministry of Foreign Affairs, Publications Department, Kabul.
- AUSTRIA:**
 Vienna: Magistrat der Stadt Wien, Abteilung 51-Statistik.
- BOLIVIA:** Biblioteca del H. Congreso Nacional, La Paz.
- BRAZIL:**
MINAS GERAES: Directoria Geral de Estatistica em Minas, Bello Horizonte.
RIO DE JANEIRO: Bibliotheca da Assembleia 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: Government Library, Regina.

CEYLON: Chief Secretary's Office (Record Department of the Library), Colombo.

CHINA: National Library, Peiping.

DANZIG: Stadtbibliothek, Free City of Danzig.

DOMINICAN REPUBLIC: Biblioteca del Senado, Santo Domingo.

ECUADOR: Biblioteca Nacional, Quito.

FINLAND: Parliamentary Library, Helsingfors.

GERMANY:

BREMEN: Senatskommission für Reichs- und Auswärtige Angelegenheiten.

HAMBURG: Senatskommission für Reichs- und Auswärtige Angelegenheiten.

HESSE: Universitäts-Bibliothek, Giessen.

LÜBECK: President of the Senate.

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:

ASSAM: General and Judicial Department, Shillong.

BENGAL: Assistant Secretary to the Government of Bengal, Department of Education, 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.

CENTRAL PROVINCES: General Administration Department, Nagpur.

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, Valetta.

NEWFOUNDLAND: Department of Home Affairs, St. Johns.

NICARAGUA: Superintendente de Archivos Nacionales, Managua.

PANAMA: Secretaría de Relaciones Exteriores, Panama.

PARAGUAY: Secretario de la Presidencia de la Republica, Asunción.

SALVADOR: Ministerio de Relaciones Exteriores, San Salvador.

SIAM: Department of Foreign Affairs, Bangkok.

STRAITS SETTLEMENTS: Colonial Secretary, Singapore.

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

INTERPARLIAMENTARY EXCHANGE OF THE OFFICIAL JOURNAL

During the year one additional foreign depository was added to the list of those countries receiving the daily issue of the Congressional Record, the depository being located in Albania.

The two chambers of the National Congress of Cuba having been superseded by a National Assembly with a single chamber, only one copy of the Record is now being forwarded to the Cuban Legislature instead of two. The Records sent to Baden and Mecklenburg-Strelitz were discontinued. There now are 102 copies of the Record forwarded to foreign depositories, a complete list of which is given below:

DEPOSITORIES OF CONGRESSIONAL RECORD

ALBANIA: Ministrija Mibretnore e Punëvetë Jashtme, Tirana.

ARGENTINA:

Biblioteca del Congreso Nacional, Buenos Aires.

Cámara de Diputados, Oficina de Información Parlamentaria, Buenos Aires.

Buenos Aires: Biblioteca del Senado de la Provincia de Buenos Aires, La Plata.

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.

AUSTRIA: Bibliothek des Hauses der Bundesgesetzgebung, Wien I.

BELGIUM: Bibliothéque de la Chambre des Représentants, Brussels.

BOLIVIA: Biblioteca del H. Congreso Nacional, La Paz.

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: Diário Oficial 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: Bibliothéque de l'Assemblée Nationale, Prague.

DANZIG: Stadtbibliothek, Danzig.

DENMARK: Rigsdagens Bureau, Copenhagen.

DOMINICAN REPUBLIC: Biblioteca del Senado, Santo Domingo.

DUTCH EAST INDIES: Volksraad von Nederlansch-Indië, Batavia, Java.

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

ESTONIA: Riigiraamatukogu (State Library), Tallinn.

FRANCE:

Chambre des Députés, Service de l'Information Parlementaire Etrangère, Paris.

FRANCE—Continued.

Bibliothèque du Sénat, au Palais du Luxembourg, Paris.

Bibliothèque, Direction des Accords commerciaux, Ministère du Commerce, Paris.

GERMANY:

Deutsche Reichstags-Bibliothek, Berlin, N. W. 7.

Reichsfinanzministerium, Berlin W. 8.

ANHALT: Anhaltische Landesbücherei, Dessau.

BRAUNSCHWEIG: Bibliothek des Braunschweigischen Staatsministeriums, Braunschweig.

MECKLENBURG: Staatsministerium, Schwerin.

OLDENBURG: Oldenburgisches Staatsministerium, Oldenburg i. O.

PRUSSIA: Bibliothek des Preussischen Landtages, Berlin, S. W. 11.

SCHAUMBURG-LIPPE: Schaumburg-Lippische Landesregierung, Bückeburg.

GIBRALTAR: Gibraltar Garrison Library Committee, Gibraltar.

GREAT BRITAIN: Library of the Foreign Office, London.

GREECE: Library of Parliament, Athens.

GUATEMALA: Archivo General del Gobierno, Guatemala.

HONDURAS: Biblioteca del Congreso Nacional, Tegucigalpa.

HUNGARY: A Magyar országgyűlés könyvtára, Budapest.

INDIA: Legislative Department, Simla.

IRAN: Library of the Iranian Parliament, Téhéran.

IRAQ: Chamber of Deputies, Bagdad, Iraq (Mesopotamia).

IRISH FREE STATE: Dail Eireann, Dublin.

ITALY:

Biblioteca della Camera dei Deputati, Rome.

Biblioteca del Senato del Regno, Rome.

Ufficio degli Studi Legislativi, Senato del Regno, Rome.

LATVIA: Library of the Saeima, Riga.

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

LIBERIA: Department of State, Monrovia.

MEXICO: Secretaría de la Cámara de Diputados, Mexico, D. F.

AGUASCALIENTES: Gobernador del Estado de Aguascalientes, Aguascalientes.

CAMPECHE: Gobernador del Estado de Campeche, Campeche.

CHIAPAS: Gobernador del Estado de Chiapas, Tuxtla Gutierrez.

CHIHUAHUA: Gobernador del Estado de Chihuahua, Chihuahua.

COAHUILA: Periódico Oficial del Estado de Coahuila, Palacio de Gobierno, Saltillo.

COLIMA: Gobernador del Estado de Colima, Colima.

DURANGO: Gobernador Constitucional del Estado de Durango, Durango.

GUANAJUATO: Secretaría General de Gobierno del Estado, Guanajuato.

GUERRERO: Gobernador del Estado de Guerrero, Chilpancingo.

JALISCO: Biblioteca del Estado, Guadalajara.

LOWER CALIFORNIA: Gobernador del Distrito Norte, Mexicali, B. C., Mexico.

MEXICO: Gaceta del Gobierno, Toluca, Mexico.

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 Potosí.

MEXICO—Continued.

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.

NEW ZEALAND: General Assembly Library, Wellington.

NORWAY: Storthingets Bibliothek, Oslo.

PERU: Cámara de Diputados, Congreso Nacional, Lima.

POLAND: Ministère des Affaires Étrangères, Warsaw.

PORTUGAL: Secretario da Assembleia Nacional, Lisbon.

RUMANIA:

Bibliothèque de la Chambre des Députés, Bucharest.

Ministère des Affaires Étrangères, Bucharest.

SPAIN:

Biblioteca del Congreso Nacional, Madrid.

SWITZERLAND:

Bibliothèque de l'Assemblée Fédérale Suisse, Berne.

SYRIA:

Ministère des Finances de la République Libanaise, Service du Matériel, Beirut.

Governor of the State of Alaouites, Lattaquié.

TURKEY: Turkish Grand National Assembly, Ankara.

UNION OF SOUTH AFRICA:

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

State Library, Pretoria, Transvaal.

URUGUAY: Biblioteca del Poder Legislativo, Montevideo.

VENEZUELA: Biblioteca del Congreso, Caracas.

VATICAN CITY: Biblioteca Apostolica Vaticana, Rome, Italy.

FOREIGN EXCHANGE AGENCIES

There is given below a list of the agencies abroad through which the distribution of exchanges is effected. Many of the agencies forward consignments to the Institution for distribution in the United States.

LIST OF EXCHANGE AGENCIES

ALGERIA, via France.

ANGOLA, via Portugal.

ARGENTINA: Comisión Protectora de Bibliotecas Populares, Calle Callao 1540. Buenos Aires.

AUSTRIA: Internationale Austauschstelle, National-Bibliothek, Wien, I.

AZORES, via Portugal.

BELGIUM: Service Belge des Échanges Internationaux, Bibliothèque Royale de Belgique, Bruxelles.

BOLIVIA: Oficina Nacional de Estadística, La Paz.

BRAZIL: Serviço de Permutações Internacionais, Bibliotheca Nacional, Rio de Janeiro.

- BRITISH GUIANA: Royal Agricultural and Commercial Society, Georgetown.
- BRITISH HONDURAS: Colonial Secretary, Belize.
- BULGARIA: Institutions Scientifiques de S. M. le Roi de Bulgarie, Sofia.
- CANADA: Sent by mail.
- CANARY ISLANDS, via Spain.
- CHILE: Servicio de Canjes Internacionales, Biblioteca Nacional, Santiago.
- CHINA: Bureau of International Exchange, National Central Library, Nanking.
- COLOMBIA: Oficina de Canjes Internacionales y Reparto, Biblioteca Nacional, Bogotá.
- COSTA RICA: Oficina de Depósito y Canje Internacional de Publicaciones, San José.
- CUBA: Sent by mail.
- CZECHOSLOVAKIA: Service Tchécoslovaque des Échanges Internationaux, Bibliothèque de l'Assemblée Nationale, Prague 1-79.
- DANZIG: Amt für den Internationalen Schriftenaustausch der Freien Stadt Danzig, Stadtbibliothek, Danzig.
- DENMARK: Service Danois des Échanges Internationaux, Kongelige Danske Videnskabernes Selskab, Copenhagen V.
- DUTCH GUIANA: Surinaamsche Koloniale Bibliotheek, Paramaribo.
- ECUADOR: Ministerio de Relaciones Exteriores, Quito.
- 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.
- GERMANY: Amerika-Institut, Universitätstrasse 8, Berlin, N. W. 7.
- GREAT BRITAIN AND IRELAND: Wheldon & Wesley, 2-4 Arthur St., New Oxford St., London, W. C. 2.
- GREECE: Bibliothèque Nationale, Athens.
- GREENLAND, via Denmark.
- GUATEMALA: Instituto Nacional de Varones, Guatemala.
- HAITI: Secrétaire d'État des Relations Extérieures, Port-au-Prince.
- HONDURAS: Biblioteca Nacional, Tegucigalpa.
- HUNGARY: Hungarian Libraries Board, Ferenciektere 5, Budapest, IV.
- ICELAND, via Denmark.
- INDIA: Superintendent of Government Printing and Stationery, Bombay.
- ITALY: R. Ufficio degli Scambi Internazionali, Ministero dell' Educazione Nazionale, Rome.
- JAMAICA: Institute of Jamaica, Kingston.
- JAPAN: Imperial Library of Japan, Uyeno Park, Tokyo.
- JAVA, via Netherlands.
- KOREA: Sent by mail.
- LATVIA: Service des Échanges Internationaux, Bibliothèque d'État de Lettonie, Riga.
- LIBERIA: Bureau of Exchanges, Department of State, Monrovia.
- LITHUANIA: Sent by mail.
- LOURENÇO MARQUEZ, via Portugal.
- LUXEMBURG, 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.
- NEW SOUTH WALES: Public Library of New South Wales, Sydney.
- NEW ZEALAND: General Assembly Library, Wellington.
- NICARAGUA: Ministerio de Relaciones Exteriores, Managua.
- NORWAY: Service Norvégien des Échanges Internationaux, Bibliothèque de l'Université Royale, Oslo.
- PALESTINE: Hebrew University Library, Jerusalem.
- PANAMA: Sent by mail.
- PARAGUAY: Sección Canje Internacional de Publicaciones del Ministerio de Relaciones Exteriores, Asunción.
- PERU: Oficina de Reparto, Depósito y Canje Internacional de Publicaciones, Ministerio de Fomento, Lima.
- POLAND: Service Polonais des Échanges Internationaux, Bibliothèque Nationale, Warsaw.
- PORTUGAL: Secção de Trocas Internacionais, Biblioteca Nacional, Lisboa.
- QUEENSLAND: Bureau of Exchanges of International Publications, Chief Secretary's Office, Brisbane.
- RUMANIA: Bureau des Échanges Internationaux, Institut Météorologique Central, Bucharest.
- SALVADOR: Ministerio de Relaciones Exteriores, San Salvador.
- SIAM: Department of Foreign Affairs, Bangkok.
- SOUTH AUSTRALIA: South Australian Government Exchanges Bureau, Government Printing and Stationery Office, Adelaide.
- SPAIN: Servicio de Cambio Internacional de Publicaciones, Paseo de Recoletos 20, bajo derecha, Madrid.
- SUMATRA, via Netherlands.
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Respectfully submitted.

C. W. SHOEMAKER,
Chief Clerk.

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

APPENDIX 6

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, 1935:

The regular appropriation made by Congress for the maintenance of the Park was \$189,600. This was increased by \$9,396 by special act of Congress to provide for salary restoration.

ACCESSIONS

Gifts.—A number of important gifts during the year enriched the collection appreciably. A serval and a caracal, gifts to President Franklin D. Roosevelt, were turned over to the Park. Russell M. Arundel, Washington, D. C., presented a bushmaster. Two of the rare Hood Island tortoises were received from the San Diego Zoological Garden. Through the interest of O. H. Johnson, of Pierre, S. Dak., four prong-horned antelope were received from the South Dakota Game and Fish Commission. Roy H. Jennier, of the Zoo staff, brought from Panama an interesting collection of reptiles, gifts from Dr. James Zetek and Douglas D. H. March.

DONORS AND THEIR GIFTS

Amazonica, Inc., New York City, 2 common boas.
Russell M. Arundel, Washington, D. C., bushmaster, 13 black-widow spiders.
Hugh D. Auchincloss, Jr., Washington, D. C., 3 alligators.
P. W. Austin, Washington, D. C., red-shouldered hawk.
Dr. Paul Bartsch, Washington, D. C., Franklin's spermophile.
Baltimore County Humane Society, rhesus monkey.
Joan T. and Joseph F. Beattie, Washington, D. C., 4 collared lizards.
D. F. Berry, Orlando, Fla., coral snake.
Mrs. E. Jason Black, Washington, D. C., Burmese mongoose.
Mrs. John S. Bleeker, Washington, D. C., alligator.
Maurice Brady, Washington, D. C., 3 salamanders.
S. K. Brown, Eustis, Fla., 2 coral snakes, hog-nosed snake, corn snake.
Dr. W. A. Brumfield, Farmville, Va., great horned owl, hog-nosed snake.
Harley B. Buckingham, Takoma Park, Md., woodcock.
Mrs. Louise Burke, Washington, D. C., red-breasted finch.
Dr. C. E. Burt, Winfield, Kans., 10 horned lizards, 2 indigo snakes, 3 green racers, bald eagle, 18 brown skinks, 4 six-lined racers, 21 collared lizards.
Tom Cargill, Washington, D. C., 2 garter snakes.
Caribbean Biological Supply Laboratories, Biloxi, Miss., 2 robust plated lizards, blue-tongued lizard, stump-tailed lizard, 6 Australian tree frogs.
C. C. Camp, Grottoes, Va., 4 pine snakes.
Mr. Childress, New Market, Va., prairie dog.
Dr. Doris M. Cochran, Washington, D. C., 2 prehensile-tailed porcupines.

- Miss Conrad, Washington, D. C., 2 grass parakeets.
Costello M. Craig, Washington, D. C., 7 water snakes, pilot snake, queen snake,
9 copperhead snakes, 2 banded rattlesnakes, 3 blacksnakes.
E. A. Cuevas, Washington, D. C., 3 black-widow spiders.
T. W. Currier, Washington, D. C., barred owl.
Ned Dearborn, Washington, D. C., Congo eel.
F. A. Dowell, Cheverly, Md., Florida gallinule.
Messrs. East and W. Perrygo, Washington, D. C., black-widow spider, black-
snake.
Elliott Eccard, Washington, D. C., barn owl.
Mr. Elliott, Washington, D. C., sparrow hawk.
Dr. Wm. O. Emery, Washington, D. C., midwife toad.
Miss Charlotte Ericson, Hyattsville, Md., yellow-naped parrot.
L. E. Eward, Washington, D. C., Pekin duck.
Mrs. Fair, Washington, D. C., raccoon.
Postmaster General James A. Farley, Washington, D. C., 3 horned lizards, box
tortoise.
Frank M. Fields, Washington, D. C., tarantula.
Fire Department, Alexandria, Va., rhesus monkey.
Florida Reptile Institute, Silversprings, Fla., 7 Florida diamondback rattle-
snakes, 4 water snakes.
A. Foehl, Jr., Philadelphia, Pa., great land crab.
Mrs. Frank, Anacostia, D. C., alligator.
R. H. Gallahan, Alexandria, Va., gopher turtle.
Lt. Col. C. C. Gee, Washington, D. C., hog-nosed snake.
Miss Constance Grady, Washington, D. C., Pekin duck.
J. A. Haeseler, New York City, 3 Florida cormorants, Florida otter.
C. C. Hagenbuch, Washington, D. C., bullsnake.
H. P. Harnberger, Washington, D. C., 11 copperhead snakes.
W. B. Harrison, Wildwood, Fla., worm lizard.
Ralph Henderson, Washington, D. C., pied-billed grebe.
Hershey Zoo, Hershey, Pa., golden eagle, 4 red-tailed hawks.
G. Hickman, Washington, D. C., woodchuck.
Wayne Hill, Washington, D. C., double yellow-head parrot.
W. H. Hoffman, Washington, D. C., salamander.
Miss Dorothy Hood, Washington, D. C., common boa.
Dr. Hopkins, Washington, D. C., white-throated capuchin.
Dr. L. R. House, Washington, D. C., opossum.
Clyde Ingalls, Ringling Bros.-Barnum & Bailey Circus, pine snake.
Capt. James Jalickee, Washington, D. C., snapping turtle.
Stuart W. Jenks, Washington, D. C., garter snake, 2 blacksnakes, 2 coachwhip
snakes, 2 hog-nosed snakes, 2 Florida king snakes.
J. C. Johnson, Washington, D. C., skunk.
Children of the Jones Family, Eastern Star Home, Washington, D. C., 2
alligators.
Mrs. A. S. Jones, and Miss Mary E. North, Washington, D. C., Hamadryas
baboon.
Carl F. Kauffeld, New York City, red-bellied turtle.
Mr. Kidwell, Vienna, Va., red fox.
H. H. King, Washington, D. C., banded rattlesnake.
Douglas Knight, Washington, D. C., blacksnake, garter snake.
Dr. W. H. Krull, Washington, D. C., pilot snake.
Robert H. Lake, Takoma Park, Md., woodchuck.
W. K. Lawlor, Washington, D. C., copperhead snake.

- Dr. Camille L'Herisson, Port-au-Prince, Haiti, Haitian boa.
 Otto Martin Locke, New Braunfels, Tex., 28 horned lizards.
 C. C. Logan, Luray, Va., banded rattlesnake.
 Mrs. Charles MacFarland, Washington, D. C., woodchuck.
 Douglas D. H. March, Panama City, Panama, common iguana, rainbow boa,
 Mexican boa, southern ctenosaur.
 Dr. Cloyd Heck Marvin, Washington, D. C., 3 golden pheasants.
 Joseph Mathy, Washington, D. C., sparrowhawk.
 John May, Washington, D. C., ring-necked pheasant.
 Wm. McClure, Washington, D. C., flying squirrel.
 E. A. McIlhenny, Avery Island, La., 17 snowy herons, 22 Louisiana herons, 4
 anhingas, 3 little blue herons.
 Dr. A. L. Melander, Riverside, Cal., Agassiz's tortoise.
 Dr. Fofu Mezitis, Washington, D. C., 2 little green herons.
 H. Mers, Washington, D. C., alligator.
 Michigan State Parks, thru' P. J. Hoffmaster, 3 beavers.
 Gerrit S. Miller, Jr., Washington, D. C., macaque monkey.
 J. C. Moore and A. K. Sonner, Washington, D. C., 2 timber rattlesnakes.
 Mrs. S. G. Morley, Carnegie Institution, Washington, D. C., 2 Costa Rican deer.
 Mrs. Murray, Washington, D. C., grass parakeet.
 National Institute of Health, Washington, D. C., rhesus monkey.
 Mrs. Joseph Oser, Washington, D. C., alligator.
 R. G. Paine, Washington, D. C., hoop or rainbow snake, pilot snake, corn
 snake.
 L. V. Pearson, Clarendon, Va., ring-necked pheasant.
 F. A. Peckham, Washington, D. C., water snake, ring-necked snake.
 Miss V. L. Philhower, Washington, D. C., grass parakeet.
 Charles L. Pilzer, Washington, D. C., barred owl, 2 rabbits.
 Igor Plansky, Washington, D. C., boa.
 Freeman Pollock, Skyland, Va., timber rattlesnake.
 Mrs. G. F. Pollock, Washington, D. C., 2 tovi paroquets.
 R. Ralston, Alexandria, Va., false chameleon.
 A. Randon, Berwick, Pa., blacksnake.
 David Rawlings, Kensington, Md., copperhead snake.
 Howard Reed, Washington, D. C., tarantula.
 Lawrence Reid, Langley, Va., barn owl, red-tailed hawk.
 Miss L. Reuter, Washington, D. C., white-faced capuchin.
 L. T. Riddle, Washington, D. C., 2 prairie dogs.
 A. P. Robbins, Chevy Chase, Md., turtle.
 C. E. Roberts, Washington, D. C., red-shouldered hawk.
 Beverly Rodgers, Washington, D. C., screech owl.
 Cornelius R. Rogers, Lake City, Kans., 12 horned lizards.
 President Franklin D. Roosevelt, The White House, serval and caracal.
 Jack Rowell, Rixeyville, Va., red fox.
 Mrs. E. Ruff, Washington, D. C., marine turtle.
 Louis Ruhe, Inc., New York City, golden cat.
 Dr. Herbert Sanborn, Nashville, Tenn., broad-winged hawk.
 San Diego Zoological Park, San Diego, Calif., 2 Hood Island tortoises.
 George Schreyer, Washington, D. C., barn owl.
 Charles Selby, Washington, D. C., coachwhip snake, bullsnake, green racer,
 milk snake, 4 hog-nosed snakes.
 Mrs. Charles Shelby, Washington, D. C., 5 bullsnakes.
 Gates Slattey, Washington, D. C., red-tailed hawk.
 Miss Edith Smallwood, Cumberland, Md., green guenon.

South Dakota Game & Fish Commission, through O. H. Johnson, Pierre, S. D.,
4 prong-horn antelopes.

Dr. Robert M. Stabler, Philadelphia, Pa., woodchuck.

Franklin A. Thompson, Washington, D. C., 2 ring-necked snakes, water snake.

M. I. Tomilin, Orange Park, Fla., garter snake, 2 hog-nosed snakes, coachwhip
snake, water moccasin or cottonmouth, 5 water snakes.

U. S. Biological Survey, Washington, D. C., pintail.

U. S. Biological Survey, through J. S. C. Boswell, Canada Goose, corn snake,
3 king snakes; through J. M. Hill, Jr., and L. C. Whitehead, 28 white-necked
ravens; through F. C. Lincoln, ring-necked pheasant; through George Mush-
bach, 2 cinnamon teals; through Utah State F. E. R. A., 3 pumas.

U. S. Bureau of Fisheries, through Fred Orsinger, 6 mudpuppies.

W. H. Vesper, Washington, D. C., 2 kinkajous.

Mrs. L. C. Vogt, Takoma Park, Md., canary.

Mrs. Reginald Walker, Washington, D. C., common turkey, mallard duck.

Mrs. Carl Werthner, Washington, D. C., sulphur-crested cockatoo.

Miss E. J. Whitacre, Washington, D. C., double yellow-head parrot.

Mrs. Hazel Whitaker, Takoma Park, Md., sulphur-crested cockatoo.

J. O. Whittey, Washington, D. C., marine turtle.

K. F. Wood, Washington, D. C., screech owl.

John F. Wynkoop, Washington, D. C., Virginia opossum.

Dr. James Zetek, Canal Zone, Panama, 60 arrow-poison frogs, 12 yellow
ateopus.

Vincent Zoll, Washington, D. C., 4 Siamese fighting fish.

Donor unknown: Boa.

Births.—There were 42 mammals born in the Park during the
year. These include the following:

MAMMALS

Scientific name	Common name	No.
<i>Axis axis</i>	Axis deer.....	1
<i>Bison bison</i>	American bison.....	3
<i>Bos indicus</i>	Zebu.....	1
<i>Canis nubilus</i>	Plains wolf.....	3
<i>Cervus duvaucelii</i>	Barasingha deer.....	2
<i>Cervus elaphus</i>	Red deer.....	2
<i>Dama dama</i>	Fallow deer.....	4
<i>Dolichotis salinicola</i>	Dwarf cavy.....	1
<i>Equus quagga chapmani</i>	Chapman's zebra.....	1
<i>Equus zebra</i>	Mountain zebra.....	1
<i>Felis concolor</i>	Puma.....	4
<i>Lama glama</i>	Llama.....	5
<i>Macaca mulatta</i>	Rhesus monkey.....	1
<i>Odocoileus virginianus</i>	Virginia deer.....	3
<i>Ovis europaeus</i>	Mouflon.....	1
<i>Sika nippon</i>	Japanese deer.....	6
<i>Taurotragus oryx</i>	Eland.....	1
<i>Thalarectos maritimus</i> × <i>Ursus gyas</i>	Hybrid bear.....	2

Exchanges.—Notable additions obtained through the medium of
exchange were an Asiatic wild ass or Kiang, black-buck or Indian
antelope, and a barking or rib-faced deer obtained from Hagenbeck

Brothers, Hamburg, Germany. From the Philadelphia Zoological Garden were received 2 electric eels. A pair of zebu were obtained from Ellis S. Joseph, New York City.

Purchases.—Important purchases during the year were 3 Siberian ibex and 3 Saiga antelopes, the first of their kind ever exhibited in the Park.

REMOVALS

Deaths.—Important losses by death during the year include 4 jackass penguins; a dusky or crested langur; secretary bird; Siberian tiger, autopsy on which showed the cause of death to be chronic gastro-enteritis. A young male orangutan died of pneumonia. A female Saiga antelope died of a broken neck, the result of running into the paddock fence when the animal became frightened. An aardvark received May 22, 1934, died April 4, 1935.

ANIMALS IN COLLECTION THAT HAD NOT PREVIOUSLY BEEN EXHIBITED

MAMMALS

Scientific name	Common name
<i>Capra sibirica</i>	Siberian ibex.
<i>Felis temmincki</i>	Golden cat.
<i>Herpestes birmanicus</i>	Burmese mongoose.
<i>Saiga tatarica</i>	Saiga antelope.
<i>Sciurus finlaysoni</i>	Lesser white squirrel.

BIRDS

<i>Anorrhinus galeritus</i>	Sumatran dusky hornbill.
<i>Cinnyris habessinicus</i>	Abyssinian sun bird.
<i>Dicrurus mirabilis</i>	White-bellied drongo.
<i>Falco albicularis</i>	White-throated bat falcon.
<i>Phoeniculus somaliensis</i>	Black-billed wood hoopoe.
<i>Scopus umbretta</i>	Hammerhead.

REPTILES

<i>Dendrobates auratus</i>	Arrow-poison frog.
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Statement of the collection

Class	Presented	Born	Received in exchange	Purchased	On deposit	Total
Mammals.....	42	42	11	13	9	117
Birds.....	127	-----	12	64	5	208
Reptiles.....	146	-----	3	51	4	204
Amphibians.....	66	-----	-----	-----	-----	66
Fishes.....	10	-----	-----	10	-----	20
Arachnids.....	10	-----	-----	-----	-----	10
Crustaceans.....	1	-----	-----	-----	-----	1
Mollusks.....	1	-----	-----	-----	-----	1
Total.....	403	42	26	138	18	627

Summary

Animals on hand July 1, 1934.....	2, 238
Accessions during the year.....	627
<hr/>	
Total animals in collection during year.....	2, 865
Removal from collection by death, exchange, and return of animals on deposit.....	695
<hr/>	
In collection June 30, 1935.....	2, 170

Status of collection

Class	Species	Individuals	Class	Species	Individuals
Mammals.....	171	509	Arachnids.....	1	4
Birds.....	315	946	Insects.....	1	40
Reptiles.....	131	413	Mollusks.....	1	3
Amphibians.....	25	107			
Fishes.....	20	148	Total.....	665	2, 170

Little attempt was made to replace the smaller mammals for which there are no exhibition quarters, but although the collection is somewhat smaller in specimens, the quality has improved.

VISITORS FOR THE YEAR

July.....	246, 350	February.....	63, 250
August.....	224, 650	March.....	171, 110
September.....	183, 950	April.....	293, 739
October.....	177, 400	May.....	219, 600
November.....	114, 900	June.....	259, 600
December.....	59, 750		
January.....	31, 850	Total.....	2, 046, 149

The attendance of organizations, mainly classes of students, of which there is definite record was 29,024 from 394 different schools in 20 States and the District of Columbia, as follows:

State	Number of persons	Number of parties	State	Number of persons	Number of parties
Connecticut.....	236	3	New York.....	3, 322	23
Delaware.....	49	1	North Carolina.....	675	20
District of Columbia.....	5, 890	107	Ohio.....	610	8
Florida.....	28	1	Pennsylvania.....	7, 176	29
Georgia.....	236	7	Rhode Island.....	38	1
Indiana.....	96	1	South Carolina.....	155	5
Maine.....	111	2	Tennessee.....	95	2
Maryland.....	3, 699	59	Virginia.....	3, 418	74
Massachusetts.....	163	5	West Virginia.....	87	3
Minnesota.....	69	1	Magicians of United States.....	47	1
New Jersey.....	2, 798	40			
New Mexico.....	26	1	Total.....	29, 024	394

About 2 o'clock almost every afternoon a census is made of the cars parked on the Zoo grounds. During the year 53,877 were so

listed, representing every State in the Union, Hawaii, Philippine Islands, Canal Zone, the Bahamas, Cuba, Alaska, Canada, and Mexico. 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 attendance by States, territories, and countries. The District of Columbia comprised only a little over 32 percent; Maryland 14 percent; Virginia 5 percent, and the remaining cars were from other States, territories, and countries.

Each year increased use is made of the Zoo's facilities by students, artists and modelers, for motion-picture photography, recording of sounds made by animals for phonograph records, and other studies. Numerous clubs and societies visit the Zoo as part of their programs.

IMPROVEMENTS

The outstanding improvements of the year were made possible by funds from the Public Works Administration and labor and materials from the Emergency Works Administration.

On January 16 an allotment was made by the Public Works Administration of \$680,000 for the construction of a small mammal house, a pachyderm house, an addition to the bird house, and mechanical shops in the Zoo. Edwin H. Clarke, an architect who has specialized in zoo construction, was engaged to take charge of the designing and construction of these buildings. The work of preparing plans and specifications for these structures was at once started in the Office of the Supervising Architect with Mr. Clarke consultant in charge. The completion of these projects will be one of the most important single events in the history of the Zoo since its foundation, for it will provide some of the structures most urgently needed for many years.

The accomplishments with the Emergency Works Administration men and materials were gratifying. For the most part, these consisted of finishing work that was started and left incomplete when the C. W. A. activities ceased at the end of March 1934, and the carrying on of similar work. The more important pieces of work completed were: Finishing of the mountain-sheep mountain and erection of fence around it; completion of the condor cage; completion of a frame building 40 by 22 feet for the wild-horse group; pouring of a concrete foundation for another similar building and the moving of a previously built structure onto this foundation; finishing of the pouring of terrazzo floors in the lion house and the grinding of terrazzo floors in the entire structure, including the grinding of drains in front of the cages; grinding of 75 linear feet of terrazzo gutter in the floor of the bird house; completion of a stone

building 15 by 88 feet, roofing of same, construction of dens in the building and cages outside for the housing of hardy outdoor animals of medium size (this structure is known as the outdoor Cat House and replaces a group of unsightly dilapidated cages formerly on this site); construction of 800 linear feet of stone wall, grading and planting adjacent to the Cat House; construction of a concrete pool of irregular shape 20 by 60 feet and 2 feet in depth, partially surrounded by a shallow moat, low concrete wall and guard rail (for swans, cormorants, and pelicans) and planting of trees and shrubbery adjacent thereto; construction of a stone wall to retain and protect the high bluff at the south end of the eagle flight cage and planting of shrubbery thereon; surfacing with broken concrete and stone of 2,500 square yards of hillside road excavated under C. W. A. and the placing of 1,000 linear feet of Belgian block gutter at the edge of this road; construction of two double and six single rustic drinking fountains with terrazzo bowls and installation of such about the Park; considerable painting; grounds improvement consisting of removal of perennial weeds from lawns, making of minor fills, seeding with grass seed, removal of excess shrubbery, including an intensive campaign against poison ivy, removal of dead trees and limbs that were dangerous over about 100 acres of the Park; planting of a few trees and shrubs, with the result that the grounds are now in much better condition than ever before.

In addition to the materials furnished by the E. W. A., materials were purchased from Park funds so far as possible for use by the labor assigned by the E. W. A., and in this manner the accomplishments were of much more lasting benefit than would otherwise have been possible.

This opportunity is taken to place on record our keen appreciation of the valuable and cordial assistance rendered by the District E. W. A. officials, particularly Capt. Howard F. Clark and William C. Cleary.

Through the cooperation of W. L. Corbin, Smithsonian librarian, the Zoo was permitted to select from the considerable mass of surplus publications accumulated by the Institution a large number of volumes and pamphlets on vertebrate zoology that will be valuable additions to the Zoo library. Also through his office, arrangements were made with the officials of the Library of Congress for the Zoo library to select a number of publications that will be useful. The repairing, cataloging, accessioning, and filing of these publications in the Zoo library remains to be done.

NEEDS OF THE ZOO

Some of the greater needs in equipment for the Zoo have been supplied through Public Work funds and the Federal Emergency Relief Administration. There is still a need for more liberal appropriations for the purchase of specimens, the Zoo having always been handicapped by the small amount available for this purpose.

Respectfully submitted.

W. M. MANN, *Director.*

DR. C. G. ABBOT,

Secretary, Smithsonian Institution.

APPENDIX 7

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, 1935:

This observatory comprises: (*a*) The central station at Washington where apparatus is made and standardized; where reports are computed, written, and published; where preparations for expeditions are made; and where a general oversight is maintained of the field stations. (*b*) A station on Mount Wilson, near Pasadena, Calif., where brief expeditions for special researches go from time to time. (*c*) A station on Table Mountain near Swartout, Calif., where daily observations of the solar constant of radiation are carried on. (*d*) A similar solar-constant station on Mount Montezuma, near Calama, Chile. (*e*) A similar station on Mount St. Katherine near Mount Sinai, Egypt. These stations are supported principally by annual Government appropriations, but in a considerable part by private funds.

REVISION OF SOLAR-CONSTANT METHODS

Records of daily observations at Mount St. Katherine since December 1933 being available, a complete reduction of them was undertaken by the assistant director, L. B. Aldrich. Additional assistance was generously made available under a grant from John A. Roebling, so that at times as many as six computers assisted Mr. Aldrich in this work. By these means he was able to compute numerous "long method" values of the solar constant of radiation, base thereon a suitable "short method" of reduction, and compute so many values by the short method as to show that the Egyptian station bids fair to prove of high excellence. Although the complete computation of all available days would not be finished before August 1935, Mr. Roebling was so far pleased and satisfied with the results from Mount St. Katherine, and so impressed with the need of this cooperating station, that in June 1935 he made a further grant to finance its occupation as a solar radiation station until 1938. At the same time he provided for a revision and extension of "short method" tables for the stations at Montezuma, Chile, and Table Mountain, Calif., which will be undertaken as soon as the work of reduction for Mount St. Katherine is completed. It is pleasant to recall that the project of a station in the Old World was initiated under a grant from the National Geographic Society. The outfit at Mount St. Katherine,

originally employed at Mount Brukkaros, Southwest Africa, is the gift of the National Geographic Society.

Mr. Roebing also made it possible to send W. H. Hoover with supplies to inspect the stations at Montezuma and Mount St. Katherine, and to install there improved pyrheliometric apparatus. The apparatus referred to is a specially constructed pyrheliometer of the Ångström type. It is to be read as often as possible during bolometric observations, and is to be calibrated daily, or nearly so, against the Abbot silver-disk pyrheliometers heretofore used for daily solar radiation observing. In this way the advantage of the smaller accidental error of the Ångström type instrument will be combined with the long-continued stability of scale of the silver-disk pyrheliometer. It is believed that the accuracy of the daily values of the solar constant will be decidedly enhanced by this improved apparatus, and by the revised short method tables. Mr. Hoover visited the Montezuma station in February and March 1934, and will go out to Egypt in September or October 1935. During his stay at Montezuma all parts of the apparatus and methods were rechecked, and several improvements were made.

The new apparatus above referred to was prepared by the observatory instrument maker, A. Kramer, and the fine electrical devices therein by L. B. Aldrich.

PERIODICITIES IN SOLAR VARIATION AND WEATHER

Studies of the periodicities which superposed make up the variation of the solar radiation were continued by Dr. Abbot, with the assistance, as computer, of Miss L. B. Simpson, under a grant from Mr. Roebing. Using the best available monthly mean values of the solar constant from 1920 to 1934, inclusive, additional periodicities of $9\frac{3}{4}$, 34, $39\frac{1}{2}$, 92, and 276 months were found in the variation of solar radiation besides the seven formerly discovered of 7, 8, 11, 21, 25, 46 and 68 months respectively. All 12 are approximately integral submultiples of 23 years. A synthesis of these 12 periodic variations in the solar radiation was made. The synthesis represents the original values to within an average deviation of $\frac{1}{100}$ of 1 percent.

Two 2-year forecasts of solar variation were prepared in 1930 and 1932, and were approximately verified by the event. The maxima and minima were nearly correctly forecasted as to time, but the curve of observation separated toward the end, as well as in 1932, from the curve of forecast. These defects seem likely to be corrected by the new analysis, and a forecast for 3 years in advance has been ventured.

Having so satisfactorily analyzed the variation of the sun, Dr. Abbot has sought to detect the influence of the newly discovered

solar variations on weather. For this purpose he analyzed the prolonged records of departures from normal for temperature and precipitation for the stations Helsingfors, Berlin, Copenhagen, Greenwich, Cape Town, and Adelaide. Monthly mean departures were computed from "World Weather Records" (recently published by the Smithsonian Institution under grants from Mr. Roebing). For greater simplicity the departures were smoothed by 5-month traveling means. They were then analyzed to detect the solar periodicities above listed, and any others which might be disclosed.

As a result Dr. Abbot was convinced that all the 12 solar periodicities named above except that of $39\frac{1}{2}$ months, and in addition several others, viz, 13.6, 55, and 138 months, occur in both temperature and precipitation at all stations investigated. But changes of phase in the periodicities were found to occur occasionally. An important regularity in these changes of phase was discovered. They are apt to occur abruptly at times which are integral multiples of $11\frac{1}{2}$ years, or still more frequently of 23 years after January 1819.

Having discovered the importance of the cycle of 23 years, both as least common multiple of all periodicities disclosed in the variation of the sun and the weather, and also as a master key to changes of phase in weather periodicities, the next step was to inquire if this cycle appears in the levels of lakes and streams, the life cycles of animals and plants, and in other terrestrial phenomena related to weather. On investigation, the 23-year cycle was disclosed in the level of the Nile for 600 years, the levels of the Great Lakes since 1837, the catch of cod and mackerel since 1812, the rainfall of southern New England since 1750, the thickness of tree-rings in many localities and over many centuries, and in varves of Pleistocene and Eocene geologic time.

Finally, on plotting the temperature and precipitation of more than 30 stations distributed over the United States, numerous detailed features which appeared in a cycle of 23 years seemed to repeat themselves, though with some modifications of phase and amplitude, in successive cycles of 23 years. Assuming that this phenomena will continue, forecasts for the 30 or more stations for 1934, 1935, and 1936 were prepared, based on the weather of the preceding half century or more. The year 1934 has now elapsed, and the forecast for that year has been compared with the event. The predictions for 1934 have been grouped in four grades of success in the forecasts both of temperature and precipitation. They are: A, excellent, showing a close accord throughout the year; B, good, nearly as satisfactory; C, accordant half the time; D, bad, showing complete disagreement. Of 66 forecasts, including 31 of temperature and 35 of precipitation, 27 percent are of grade A, 42 percent of grade B, 17 percent of grade C, and 14 percent of grade D.

Reverting to the levels of the Great Lakes, not only the 23-year cycles, but apparently the double cycle of 46 years is of great importance. It appears to be associated with the drought which has occurred in the northwest-central States since about 1930. It is, of course, plain that the low lake levels are subject to a lag of perhaps 3 years behind the drought conditions which cause them. Hence recovery may be expected several years before the return of the lakes to normal levels.

FIELD WORK

Observations of the solar radiation have gone on regularly at Table Mountain, Calif., Montezuma, Chile, and Mount St. Katherine, Egypt. Besides the solar observatories, Mr. Butler, field director at Montezuma, at his own initiative, has continued for several years highly valuable seismographic observations there in cooperation with the United States Coast and Geodetic Survey. Also, the assistant at Montezuma, Mr. Maltby, has undertaken certain cosmic ray work in cooperation with the Massachusetts Institute of Technology.

For several years the observers at Table Mountain, Calif., carried on regular daily and nightly measurements of astronomical "seeing" to assist in selecting the best location for the 200-inch telescope of the California Institute of Technology. The "seeing" at Table Mountain proved to be of the highest excellence. The observations are now discontinued.

The expedition of Messrs. Abbot and Aldrich to Mount Wilson, referred to in last year's report, proved less successful than was at first thought. The comparison of silver-disk pyrhelimeters with the standard water-flow instrument indeed was highly successful, and a paper thereon has been published. But the investigation of the extreme infrared solar spectrum, although incidentally leading to a great improvement in the karpometer, a very sensitive radiation instrument, requires further improvements of apparatus for success. Observations were undertaken in cooperation with Dr. Joel Stebbins on the energy spectra of the stars. In this experiment the stellar spectral rays were selected by a battery of Christiansen filters, and the intensities were measured by means of the Stebbins photoelectric cell. Though apparently promising, the results were found to be vitiated by stray light. This occurred because the photoelectric cell is so disproportionately sensitive at certain wave lengths. It will be necessary to substitute some other receiver, as for instance the thermoelectric cell, if energy spectra of the stars are to be observed.

PERSONNEL

No change has occurred in the regular personnel. Temporary computers under Roebling grants have been employed, including the Misses L. B. Simpson and Frances Holly, Mrs. F. E. Fowle, and E. S. Chappell, Jr.

SUMMARY

Regular observations of the solar constant of radiation have been continued daily when possible at Table Mountain, Calif., Montezuma, Chile, and Mount St. Katherine, Egypt. Improvements in instrumental equipment and in methods have been made tending to increase the accuracy of the daily results. Reductions almost completed, including tables required in future reductions, have been computed for Mount St. Katherine. They seem to indicate that the station will be nearly, if not quite, on a par with our best station, Montezuma. Through the generosity of John A. Roebling, it is arranged to continue the Mount St. Katherine station to 1938. Analysis of solar variation since 1920 has revealed 12 periodicities, all approximately aliquot parts of 23 years. Their summation reproduces the entire solar variation to an average agreement within $\frac{1}{5}$ of 1 percent. These 12 periodicities, with three more not as yet found in solar variation, but all approximately aliquot parts of 23 years, are found in temperature and precipitation records for six terrestrial stations for the past century. Inversions and changes of phase occur, but these are found to take place at integral multiples of $11\frac{1}{2}$ years measured from 1819. The 23-year cycle, which Hale found in the magnetic polarity of sun spots, is found in the levels of lakes and streams, the widths of tree-rings, the catches of ocean fish, varves of Pleistocene and Eocene geologic age, and other phenomena depending on weather. Numerous repetitive identifiable features occur in temperature and precipitation within each 23-year cycle. Forecasts of both elements for 1934, 1935, and 1936 for over 30 stations in the United States have been made. Satisfactory agreement between forecasts and the events has been found for about two-thirds of the stations during 1934. It has not been deemed wise to publish the forecasts until further tested.

Respectfully submitted.

C. G. ABBOT, *Director.*

The SECRETARY,
Smithsonian Institution.

APPENDIX 8

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, 1935:

It is a pleasure to acknowledge further financial support for the Division during the past year from the Research Corporation of New York.

An important improvement of the Christiansen filters used for selecting desired spectral rays for carrying on plant growth experiments was perfected. The difficulty hitherto has been that when powerful beams of white light enter a Christiansen filter, the central parts of the filter, farthest from the control of the water jacket, rise considerably above the temperature of control. This spoils the selective properties of the filter and gives rise to a broad, indefinite spectral band. The defect was remedied by inserting parallel with the transmitted beam a grill of thin aluminum strips intimately in contact with the outer wall of the filter. In this way, without much loss of light, the excess heat at the center is conducted away and the selective properties are greatly improved.

Christiansen filters thus equipped have been used to repeat experiments on the dependence of the growth of algae and of wheat on the wave length of radiation. In the experiments on wheat a further improvement was made by setting up the great coelostat referred to in the Smithsonian Report for 1903, constructing for use with it a pair of very large Christiansen filters and using sunlight in place of electric light, thus multiplying the available intensities. By controlling the temperature of the water jacket it was then possible to select from the solar spectrum any desired color from the extreme red to the deep violet.

With these improvements, studies of wave-length influence on the growth of unicellular algae and on photosynthesis of wheat have been repeated with great success, much improving earlier results. The study of the lethal effects of ultraviolet rays on unicellular algae has also been repeated and carried to a wave length of 2,250 Ångströms, with highly accurate results. Further experiments in phototropism are in progress, and new results of especial interest seem to have been found. Growth of tomato plants under control as to temperature, humidity, and color and intensity of radiation are

in progress. The interesting and important observation was made that these plants require a resting period at cooler temperature as well as darkness.

In cooperation with the United States Department of Agriculture, experiments were made and published on the promotion and inhibition of the germination of seeds under different selected wave lengths of light.

An experiment on the growth of wheat under out-of-door conditions with controlled quantities of carbon dioxide was carried through with satisfactory results.

Absorption spectral apparatus has been adjusted for use.

A number of papers embodying the results of all of the above-mentioned experiments were published during the year, and others are in preparation for publication.

Personnel.—No changes occurred, except that Dr. Enoch Karrer was employed temporarily.

Respectfully submitted,

C. G. ABBOT, *Director.*

THE SECRETARY,
Smithsonian Institution.

APPENDIX 9

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, 1935:

THE LIBRARY

The library of the Smithsonian Institution is in reality a library system, for it is composed of 45 libraries, each related to the work of the Institution as a whole or to that of one of its branches. Outstanding among them in point of age, size, and importance of material are the Smithsonian deposit in the Library of Congress and the libraries of the United States National Museum and the Bureau of American Ethnology. The other members of the system are the libraries of the Astrophysical Observatory, Freer Gallery of Art, National Gallery of Art, National Zoological Park, the Langley aeronautical library, radiation and organisms library, Smithsonian office library, and the 35 highly specialized sectional libraries of the National Museum. The libraries, taken together, number nearly 850,000 volumes, pamphlets, and charts.

PERSONNEL

Mrs. George C. Rodgers (nee Margaret Moreland), who for 5 years had been the efficient senior stenographer and secretary in the office of the librarian, resigned to accept a position in New York. The vacancy was filled by the transfer, from the examining division of the Civil Service Commission, of Lucile A. Torrey, an A. B. from Tulane University and a B. S. in library science from the Louisiana State University, with stenographic training.

Grace A. Parler, who since 1930 had been on temporary appointment as under library assistant in the Freer Gallery of Art, was made a permanent member of the staff and advanced in grade.

Bruce Middleton resigned the position of minor library assistant in the Astrophysical Observatory to accept promotion in the Department of Agriculture.

A temporary position of minor library assistant was established in the National Zoological Park and filled for 3 months.

The temporary employees were Clarence Athearn, Alice Elizabeth Hill, Margaret Link, Grace A. Parler, and Helen Rankin. There were also for varying periods during the year several student assistants, including one assigned to the library by the school of library science of Simmons College, and a number of F. E. R. A. workers.

EXCHANGE OF PUBLICATIONS

The exchange work of the library continued much as usual. The number of packages, each of one or more publications, that came by mail was 20,376—a gain of 332 over 1934; and through the International Exchange Service, 1,880—a loss of 96. Of especial value to the Smithsonian deposit and the library of the National Museum were the sendings from the Arctic Institute, Leningrad; the Franklin Institute, Philadelphia; the Peabody Museum, Cambridge; the Geografsko Drustvo na Univerzi and Slovenska Matica, Ljubljana; the Sociedad Científica Argentina, Buenos Aires; and the Tokyo Geographical Society, Tokyo. Among the publications received were 4,787 dissertations. These came from the Academy of Freiberg, the universities of Basel, Berlin, Bern, Bonn, Breslau, Budapest, Erlangen, Freiburg, Giessen, Greifswald, Halle, Heidelberg, Helsingfors, Jena, Johns Hopkins, Kiel, Königsberg, Köln, Lund, Marburg, Pennsylvania, Rostock, Tübingen, Utrecht, and Zürich; and technical schools at Berlin, Braunschweig, Delft, Dresden, Karlsruhe, and Zürich. The number of letters written was 2,135. The library arranged for 264 new exchanges—26 more than the year before—and obtained 6,728 publications—an increase of 2,614 over 1934—especially requested by the various libraries of the Institution. Many of these items, however, it should be explained, were found among the Smithsonian duplicates.

GIFTS

As usual, there were many gifts. Prominent among them was a copy of the *Yellow Book of Lecan*, edited by Robert Atkinson, from the Royal Irish Academy. Others were *Corpus Doctrinae Christianae (1570)*, by Philippum Melanthonem, from Mrs. Charles D. Walcott; *Letters of Sir Thomas Bodley to Thomas James, First Keeper of the Bodleian Library*, edited by G. W. Wheeler, from the librarian of the Bodleian; *Catalogue of the Sanskrit and Prakrit Manuscripts in the Library of the India Office, volume 2, Brahmanical and Jaina Manuscripts (parts 1-2)*, by Arthur B. Keith, from the Secretary of State for India in Council; *A Glossary of the Construction, Decoration, and Use of Arms and Armor*, by George Cameron Stone, from the author; *Official Records of the Union and Confederate Navies in the War of the Rebellion, in 31 volumes*, from the Woman's College Library, Duke University; *The Flora of the Niagara Frontier Region*, by Charles A. Zenkert, from the author; *the Lichen Flora of the United States*, by Bruce Fink, from the University of Michigan Press; *Paintings from the Tomb of Rekh-Mi-Re at Thebes*, by Norman de Garis Davies, from the Metropolitan Museum of Art; *The Moths of South Africa, volume 2*, by A. J. T. Janse, from the

author; *Wild Birds at Home*, and *The American Eagle*, by Francis H. Herrick, from the author; *Moss Flora of North America North of Mexico*, volume 3, part 4, by A. J. Grout, from the author; *Ferns of the Northwest*, by Theodore C. Frye, from the author; *Trees of the Southeastern States*, by W. C. Coker and H. R. Totten, from W. C. Coker; *Emile Berliner, Maker of the Microphone*, by Frederic William Wile, from Mrs. Emile Berliner; *Some Japanese Balloon Prints*, by Bella C. Landauer, from the author; *Problems of Petroleum Geology*, edited by W. E. Wrather and F. H. Lahee, from the American Association of Petroleum Geologists; *Index to Jordan's "Genera of Fishes"*, volumes 1-4, by Hugh M. Smith, and *Post-Card Pictures of Siamese Fishes*, by Luang Masya Chitrakaru, from Hugh M. Smith; *the Cyclist (London)*, 25 volumes (1879-1903), from A. E. Schaaf; *Columbia Catalogues (1878-1911)*, by the Pope Manufacturing Co., from E. H. Broadwell (through A. E. Schaaf); *Narrative of the U. S. Exploring Expedition, during the years 1838, 1839, 1840, 1841, 1842*, volume 6 (atlas), by Commander Charles Wilkes, from Mrs. Isabel Brackenridge Hendry; *Liberia Rediscovered*, by James C. Young, from Harvey S. Firestone; *Contributions to Electricity and Magnetism (extracted from the Transactions of the American Philosophical Society, 1839, 1841)*, by Joseph Henry, from Riley D. Moore; *Researches in Cancer: Part 1, 1896-1921, 1922-1932*, by C. W. G. Rohrer, from the author; *John Adams's Book*, compiled by Henry Adams, from the Boston Athenaeum; *Simplified Ballistics for Sportsmen*, by Harry F. Geist, from the author; *Air Conditioning*, by E. W. Riesbeck, from the Goodheart-Willecox Co., Inc.

Many publications were received from Mrs. Charles D. Walcott, and 22 volumes of a miscellaneous character from Mrs. George Cabot Lodge. Other gifts included 1,221 publications from the Geophysical Laboratory, 657 from the American Association for the Advancement of Science, several hundred from the Library of Congress, and a number from the Department of State, Department of Commerce, Pan American Union, American Association of Museums, and Anthropological Society, Biological Society, and Helminthological Society of Washington. The largest gift, however, came from the International Catalogue of Scientific Literature, which late in the year turned over to the library about 7,000 publications, chiefly scientific serials, embracing more than 100 titles and not a few long runs. These will be of great value to the library, especially as they contain many items that are lacking in its sets. Gifts also came from Secretary Abbot, Assistant Secretary Wetmore, and the following other members and associates of the scientific staff: Dr. Paul Bartsch, Dr. R. S. Bassler, Dr. A. G. Böving, August Busck, A. H. Clark, H. B. Collins, W. L. Corbin, F. E. Fowle, Dr. Herbert

Friedmann, L. C. Gunnell, Dr. Walter Hough, Dr. Aleš Hrdlička, Neil M. Judd, Dr. Remington Kellogg, Leon Kelso, Dr. E. G. Kirk, Dr. W. C. Mansfield, Dr. W. R. Maxon, G. S. Miller, Jr., Dr. G. S. Myers, A. J. Olmsted, R. G. Paine, Dr. Mary J. Rathbun, and Dr. Waldo Schmitt.

SMITHSONIAN DEPOSIT

The Smithsonian deposit is the main library of the Institution. The collection was kept at the Smithsonian until 1866 when, under a special act of Congress, it was deposited in the Library of Congress, where it has steadily grown, by regular additions from the Institution, from 40,000 volumes, pamphlets, and charts to 540,000. It is distributed among the various divisions of the Library according to the nature of the material, but, as the deposit is largely scientific and technical in character and abounds in the reports, proceedings, and transactions of the learned institutions and societies of the world and in periodicals, both American and foreign, it is shelved for the most part in the Smithsonian and Periodical Divisions. It is the great central collection on which the other libraries of the Institution rely almost daily for necessary publications, many of which can be obtained nowhere else in Washington and some in few other places in America.

To the deposit the Smithsonian library added during the fiscal year just closed 16,500 items, consisting of 2,639 volumes, 9,148 parts of volumes, 3,128 pamphlets, and 1,585 maps and charts. As in former years, several thousand statistical documents that the library received from foreign governments were forwarded, mainly unopened, to the Division of Documents in the Library of Congress.

NATIONAL MUSEUM LIBRARY

Next in importance to the deposit, among the libraries of the Smithsonian Institution, is the library of the United States National Museum. At the close of the year it numbered 88,377 volumes and 112,693 pamphlets, chiefly on natural history and technology. The additions were 11,321 publications, or 1,639 volumes, 8,697 parts of volumes, 980 pamphlets, and 5 charts. The staff sent 101 volumes to the bindery, recorded 8,709 periodicals, cataloged 2,592 publications, and added 21,896 cards to the main catalogs and shelf lists. They filed 469 cards of the Wistar Institute and 3,774 of the Concilium Bibliographicum, besides sorting 8,871 of the latter for the subject files of the curators. They assigned to the sectional libraries 4,233 current publications—as well as 6,512 reprints that had accumulated over a period of years—and lent to the scientific staff 9,636, of which 2,489 were borrowed from the Library of Congress, especially

the Smithsonian deposit, and 442 from other libraries, including 15 from outside of Washington. They made 436 loans to other libraries—an increase of 326 over the year before. They also assisted the libraries of the Bureau of American Ethnology, National Gallery of Art, and National Zoological Park, and advanced materially the work of reorganizing the general collection on technology and the special collections on administration and engineering in the old Museum. The requests for reference and bibliographical service were more numerous than usual and frequently required hours and even days of research not only in the Museum library but in the Library of Congress and elsewhere.

The sectional libraries, which number 35, were not changed during the year. They are as follows:

Administration	Invertebrate paleontology
Administrative assistant's office	Mammals
Agricultural history	Marine invertebrates
Anthropology	Medicine
Archeology	Minerals
Biology	Mollusks
Birds	Organic chemistry
Botany	Paleobotany
Echinoderms	Photography
Editor's office	Physical anthropology
Engineering	Property clerk's office
Ethnology	Reptiles and batrachians
Fishes	Superintendent's office
Foods	Taxidermy
Geology	Textiles
Graphic Arts	Vertebrate paleontology
History	Wood technology
Insects	

OFFICE LIBRARY

The Smithsonian office library is shelved partly in or near the offices of the administrative staff and in the main reference and exhibition rooms of the Institution, and partly in the library of the old Museum. It numbers approximately 30,000 items and comprises, in addition to an extensive collection of works of general reference and publications of learned institutions and societies, a small rare-book collection, several important special collections on history and the natural sciences, and many books and periodicals of less scholarly interest designed primarily for the home hours of the employees.

The additions to the library in 1935 were 240 volumes, 773 parts of volumes, and 22 pamphlets. The staff entered 3,448 periodicals, prepared and filed 1,683 catalog cards, classified 3,665 aeronautical clippings and mounted 1,415, made 146 cards for the aeronautical

file, received 2,252 visitors, and loaned 2,954 publications. These statistics include some for the technological library of the National Museum, inasmuch as both collections are served, for the most part, by the same library attendants.

BUREAU OF AMERICAN ETHNOLOGY LIBRARY

The library of the Bureau of American Ethnology concerns itself chiefly with the primitive peoples of the Western Hemisphere, notably the North American Indians. It consists of 31,101 volumes and 17,189 pamphlets, besides important manuscripts, vocabularies, and photographs. It was increased during the year by 400 volumes and 94 pamphlets. The staff cataloged 788 publications, recorded 3,125 periodicals, added 3,865 cards to the catalog, made 1,069 loans, and rendered even more than usual reference and bibliographical service to the scientists of the Bureau and other investigators. The regular attendants had the assistance at different times during the year of two trained employees from other libraries of the Institution, who advanced materially the preparation of cards for the Bureau's catalog, as well as for the union catalog of the Smithsonian, and began the checking of the sets of society publications, with a view to obtaining needed numbers by exchange while they are still available; 81 of these were found in the duplicate collection of the Institution.

ASTROPHYSICAL OBSERVATORY LIBRARY

The library of the Astrophysical Observatory deals largely with meteorology and astrophysics. Its accessions of 57 volumes, 1,033 parts of volumes, and 75 pamphlets increased the collection during the fiscal year to 4,624 volumes and 3,903 pamphlets. The number of cards added to the catalog was 1,633. The loans were 127.

RADIATION AND ORGANISMS LIBRARY

The library of radiation and organisms, the youngest and smallest unit in the Smithsonian library system, is a collection of 207 volumes, 14 pamphlets, and 6 charts pertaining mainly to the radiation of the sun and its effect on plant and animal life. It was increased in 1935 by 6 volumes, 224 parts of volumes, and 2 pamphlets.

LANGLEY AERONAUTICAL LIBRARY

The Langley aeronautical library is the Institution's well-known collection of aeronautical publications, which was brought together in the first instance by Samuel Pierpont Langley, and later increased

by gifts from Alexander Graham Bell, Octave Chanute, and James Means, and since by regular additions from the Smithsonian. In 1930 most of the library was sent as a special deposit to the Library of Congress, where, under its own name and bookplate, it supplements in important respects for research purposes the Government's chief collection. The library has 2,009 volumes, 1,179 pamphlets, and 29 charts. Among its items are many early aeronautical magazines, as well as manuscripts, photographs, and newspaper clippings. The accessions in 1935 were 31 volumes, 538 parts of volumes, and 51 pamphlets.

NATIONAL GALLERY OF ART LIBRARY

As the library of the National Gallery of Art has no regular trained attendants, the staff of the Smithsonian and Museum libraries, assisted by several F. E. R. A. workers, kept up the current work of the library and continued, in a measure, the task of bringing together and cataloging its collections, which was recently undertaken. The accessions were 316 volumes and 306 pamphlets, which increased the library to 2,447 volumes and 2,030 pamphlets. The staff entered 1,621 periodicals, cataloged 672 publications, added 2,341 cards to the catalog and shelf list, prepared 543 cards for other files, and labeled 668 books. Toward the close of the year, 1,935 publications were transferred to the library from the section of administration in the National Museum.

FREER GALLERY OF ART LIBRARY

The library of the Freer Gallery of Art received further expert attention in 1935. Consequently by the close of the fiscal year the dictionary catalog, which had been begun several years before, was finished to date, except for a number of the Chinese and Japanese items. The staff cataloged 225 publications, prepared 3,013 cards for the library files, as well as 658 for the union catalog at the Smithsonian Institution, and sent 19 volumes to the bindery. The main collection, which numbers 5,297 volumes and 3,521 pamphlets, was increased by 326 volumes, 170 parts of volumes, and 56 pamphlets; the field collection by 369 volumes, 627 parts of volumes, 103 pamphlets, and 69 maps. The latter, which had been for some years in China, where until recently the Freer was carrying on important archeological investigations, was brought back to Washington and deposited in the Gallery. During its sojourn abroad it grew considerably and now numbers 1,920 volumes, 640 pamphlets, and 69 maps. Together the two collections, which relate almost entirely to the chief interests of the Freer—namely, the art and culture of the Far East, India, Persia, and the nearer East, and the activities of certain

American painters, notably James McNeill Whistler, many of whose works are owned by the Gallery—contain not a few rare items and supplement to an important degree the collections at the Library of Congress, particularly those in the manuscript, fine arts, and oriental divisions. The treasures of the library are, of course, the "Washington Manuscripts" of the Bible, dating from the fourth and fifth centuries.

NATIONAL ZOOLOGICAL PARK LIBRARY

The library of the National Zoological Park comprises 1,412 volumes and 1,962 pamphlets chiefly on the care, study, and exhibition of wild animals. The accessions in 1935 were 82 volumes, 107 parts of volumes, and 102 pamphlets. Besides these, 2,394 publications of special interest to the scientists of the Park were selected late in the year from the duplicates at the Smithsonian Institution and the Library of Congress and will in due time be made part of the collection. The number of cards added to the catalog was 540. Two trained assistants were employed for brief periods during the year.

SUMMARY OF ACCESSIONS

The accessions for the fiscal year may be summarized as follows:

Library	Volumes	Pamphlets and charts	Total
Astrophysical Observatory.....	57	75	132
Bureau of American Ethnology.....	400	94	494
Freer Gallery of Art.....	695	228	923
Langley Aeronautical.....	31	51	82
National Gallery of Art.....	316	306	622
National Zoological Park.....	82	102	184
Radiation and Organisms.....	6	2	8
Smithsonian Deposit, Library of Congress.....	2,639	4,713	7,352
Smithsonian Office.....	240	22	262
United States National Museum.....	1,639	985	2,624
Total.....	6,105	6,578	12,683

These accessions, together with the additions represented by the Freer field collection, incident to its being brought to Washington and given a place in the library of the Gallery, increased the approximate number of publications in the library system of the Institution to the following:

Volumes.....	605,117
Pamphlets.....	215,042
Charts.....	28,358
Total.....	848,517

This total does not, of course, include the many thousands of volumes that are not yet completed, bound, or cataloged.

SPECIAL ACTIVITIES

Besides meeting the current demands, the staff continued several important undertakings left over from the C. W. A. days, and engaged in two or three new ones, related to the general work of reorganizing the Smithsonian library system that was begun some years ago. In carrying out these special projects, it was assisted by a number of F. E. R. A. workers, who were assigned to the Institution for different periods during the year.

Among the projects, two were outstanding. The work of sorting and arranging the foreign scientific and technical duplicates in the west stacks of the Smithsonian Building and labeling the shelves of the entire collection, both American and foreign, was carried toward completion. One result of this undertaking was that, of the 6,728 publications especially requested during the year by the libraries of the Institution, about 40 percent were found in this collection. It is expected that as the checking of the standard sets in the libraries goes on, thousands more of the items lacking will be available here. Another result was that it was possible for the Smithsonian library to cooperate, to the extent of more than 1,100 numbers, with the American Association for the Advancement of Science in its endeavor to form a set of the publication *Science* for its office use—a slight return for the many generous gifts that the Association has made to the library in recent years; it was also possible for the library to present 283 numbers of the *Journal of the Washington Academy of Sciences*, as suggested by the Library of Congress, to the *Akademiia Nauk*, Leningrad, to help that institution fill out its set. Still another result was that substantial runs of various important serials were assembled, to be filed later in the reserve section of the library for use either to reinforce the main sets or to replace them when they are worn out.

The second outstanding project was the sorting and reassignment of the contents of the sectional libraries of administration and engineering. The material no longer needed by the officials concerned was disposed of in various ways. The work of inventorying and arranging the items to be retained in the sections was also undertaken.

Another activity of considerable importance was the careful examination of a large accumulation of maps—the second to be treated in this manner the last few years—with the result that about 500 were chosen for the Museum library and 1,576 sent to the Smithsonian deposit, where they would be of service in completing the files of the Library of Congress and still be available to the scientists of the Institution as well as to investigators outside.

Among other activities a few should be mentioned. Special sendings of duplicates were made to Harvard, Yale, Princeton, Brown, the University of Pennsylvania, Vanderbilt, and the Marine Biological Laboratory at Woods Hole, and 150 or more publications, both old and new, which were needed by the National Museum and the National Gallery of Art, were obtained in exchange; about 20,000 publications, many of them Government documents, not required by the library, were sent back to the issuing bureaus or transferred to various Federal libraries; 2,750 returned publications of the Smithsonian and its branches were checked and 351 found that were needed in the library sets; the dictionary index of Smithsonian publications was kept up to date, and considerable progress was made on the index of exchange relations; the union catalog was also advanced, as the following table will show:

Volumes cataloged.....	4,239
Pamphlets cataloged.....	2,514
Charts cataloged.....	14
New serial entries made.....	121
Typed cards added to catalog and shelf list.....	5,866
Library of Congress cards added to catalog and shelf list..	16,085

CONCLUSION

The year, then, was one of noteworthy progress, despite the regrettable fact that it was again found necessary, owing to economic conditions, to curtail the funds, almost to the vanishing point, customarily allotted to the library for binding and for the employment of extra trained assistants.

Respectfully submitted.

WILLIAM L. CORBIN, *Librarian.*

Dr. C. G. ABBOT,

Secretary, Smithsonian Institution.

APPENDIX 10

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, 1935:

The Institution published during the year 32 papers in the series of Smithsonian Miscellaneous Collections, 1 annual report and pamphlet copies of the 20 articles contained in the report appendix, and 1 special publication. The United States National Museum issued 1 annual report and 7 separates from the Proceedings. The Bureau of American Ethnology issued 1 annual report. The Freer Gallery of Art issued 1 publication in the series of Oriental Studies.

Of the publications there were distributed 124,186 copies, which included 48 volumes and separates of the Smithsonian Contributions to Knowledge, 64,218 volumes and separates of the Smithsonian Miscellaneous Collections, 15,799 volumes and separates of the Smithsonian Annual Reports, 3,800 Smithsonian special publications, 26,592 volumes and separates of the National Museum publications, 11,955 publications of the Bureau of American Ethnology, 55 publications of the National Gallery of Art, 1,281 publications of the Freer Gallery of Art, 40 Annals of the Astrophysical Observatory, 22 reports of the Harriman Alaska Expedition, and 376 reports of the American Historical Association.

SMITHSONIAN MISCELLANEOUS COLLECTIONS

Of the Smithsonian Miscellaneous Collections, volume 89, there was issued the title page and table of contents; volume 91, 5 papers; volume 92, 13 papers and title page and table of contents; volume 93, 9 papers; and volume 94, 5 papers, making 32 papers in all, as follows:

VOLUME 89

Title page and table of contents. (Publ. 3331.)

VOLUME 91

Reports on the collections obtained by the first Johnson-Smithsonian Deep-Sea Expedition to the Puerto Rican Deep.

No. 16. New marine mollusks, by Lois F. Corea. 9 pp., 3 pls. (Publ. 3258.) September 18, 1934.

No. 17. New sponges from the Puerto Rican Deep, by M. W. de Laubenfels. 23 pp. (Publ. 3283.) December 24, 1934.

No. 18. New monogenetic trematodes from marine fishes, by Emmett W. Price. 3 pp., 1 pl. (Publ. 3286.) November 8, 1934.

No. 19. New parasitic copepods, by Charles Branch Wilson. 9 pp., 3 pls. (Publ. 3298.) April 8, 1935.

No. 20. *Bollmania litura*, a new species of goby, by Isaac Ginsburg. 3 pp., 1 pl. (Publ. 3299.) April 10, 1935.

VOLUME 92

No. 1. The hypotrochanteric fossa of the femur, by Aleš Hrdlička. 49 pp., 14 pls. (Publ. 3250.) August 4, 1934.

No. 2. New fresh-water mollusks from northern Asia, by Alan Mozley. 7 pp., 1 pl. (Publ. 3253.) August 8, 1934.

No. 3. Lethal response of the alga *Chlorella vulgaris* to ultraviolet rays, by Florence E. Meier. 12 pp., 3 pls. (Publ. 3254.) August 6, 1934.

No. 5. Colonial formation of unicellular algae under various light conditions, by Florence E. Meier. 14 pp., 3 pls. (Publ. 3256.) October 8, 1934.

No. 6. Effects of intensities and wave lengths of light on unicellular green algae, by Florence E. Meier. 27 pp., 3 pls. (Publ. 3257.) October 11, 1934.

No. 7. Herpetological collections from the West Indies made by Dr. Paul Bartsch under the Walter Rathbone Bacon Scholarship, 1928-1930, by Doris M. Cochran. 48 pp. (Publ. 3259.) October 15, 1934.

No. 8. Samuel Pierpont Langley, by C. G. Abbot. 57 pp., 6 pls. (Publ. 3281.) August 22, 1934.

No. 9. The skeletal musculature of the blue crab, *Callinectes sapidus* Rathbun, by Doris M. Cochran. 76 pp., 30 figs. (Publ. 3282.) January 22, 1935.

No. 10. Recent discoveries of Cambrian beds in the northwestern United States, by Charles Elmer Resser. 10 pp. (Publ. 3284.) November 6, 1934.

No. 11. Phototropic sensitivity in relation to wave length, by Earl S. Johnston. 17 pp., 2 pls., 4 figs. (Publ. 3285.) December 6, 1934.

No. 12. Remarkable lightning photographs, by C. G. Abbot. 3 pp., 1 pl. (Publ. 3287.) November 2, 1934.

No. 13. The standard scale of solar radiation, by C. G. Abbot and L. B. Aldrich. 3 pp. (Publ. 3288.) November 2, 1934.

No. 14. Archeological investigations in the Bay Islands, Spanish Honduras, by William Duncan Strong. 176 pp., 33 pls., 38 figs. (Publ. 3290.) February 12, 1935.

Title page and table of contents. (Publ. 3332.)

VOLUME 93

No. 1. The effect of ultraviolet radiation on the ova of the ascarid roundworms *Toxocara canis* and *Toxascaris leonina*, by W. H. Wright and E. D. McAlister. 13 pp. (Publ. 3291.) December 26, 1934.

No. 2. Mud shrimps of the Atlantic coast of North America, by Waldo L. Schmitt. 21 pp., 4 pls. (Publ. 3292.) February 15, 1935.

No. 3. New earthworms from China, with notes on the synonymy of some Chinese species of *Drawina* and *Pheretima*, by G. E. Gates. 19 pp., 15 figs. (Publ. 3293.) February 27, 1935.

No. 4. Pioneer wind tunnels, by N. H. Randers-Pehrson. 20 pp., 4 pls. (Publ. 3294.) January 19, 1935.

No. 5. Nomenclature of some Cambrian trilobites, by Charles Elmer Resser. 46 pp. (Publ. 3295.) February 14, 1935.

No. 6. Ear exostoses, by Aleš Hrdlička. 98 pp., 5 pls. (Publ. 3296.) May 14, 1935.

No. 7. The Christiansen light filter: Its advantages and limitations, by E. D. McAlister. 12 pp., 2 pls., 4 figs. (Publ. 3297.) April 2, 1935.

No. 8. The classification of the Edrioasteroidea, by R. S. Bassler. 11 pp., 1 pl. (Publ. 3301.) April 4, 1935.

No. 9. New species of Tertiary Cheilostome Bryozoa from Victoria, Australia, by Ferdinand Canu and Ray S. Bassler. 54 pp., 9 pls. (Publ. 3302.) April 26, 1935.

VOLUME 94

No. 1. The darker side of dawn, by Ananda K. Coomaraswamy. 18 pp. (Publ. 3304.) April 17, 1935.

No. 2. Concerning the Badianus manuscript, an Aztec herbal, "Codex Barberini, Latin 241" (Vatican Library), by Emily Wolcott Emmaert. 14 pp., 4 pls. (Publ. 3329.) May 18, 1935.

No. 3. Thomas Lincoln Casey and the Casey collection of Coleoptera, by L. L. Buchanan. 15 pp., 1 pl. (Publ. 3330.) June 8, 1935.

No. 4. A Folsom complex: Preliminary report on investigations at the Lindenmeier site in northern Colorado, by Frank H. H. Roberts, Jr. 35 pp., 16 pls., 3 figs. (Publ. 3333.) June 20, 1935.

No. 5. Wave lengths of radiation in the visible spectrum inhibiting the germination of light-sensitive lettuce seed, by Lewis H. Flint and E. D. McAlister, 11 pp., 5 figs. (Publ. 3334.) June 24, 1935.

SMITHSONIAN ANNUAL REPORTS

Report for 1933.—The complete volume of the Annual Report of the Board of Regents for 1933 was received from the Public Printer in June 1935.

Annual Report of the Board of Regents of the Smithsonian Institution showing operations, expenditures, and condition of the Institution for the year ending June 30, 1933. xiv+468 pp., 56 pls., 67 text figs. (Publ. 3260.)

The appendix contained the following papers:

The new world-picture of modern physics, by Sir James H. Jeans.

The markings and rotation of Mercury, by E. M. Antoniadi.

British Polar Year Expedition to Fort Rae, Northwest Canada, 1932-33, by J. M. Stagg.

Protium-deuterium-tritium, the hydrogen trio, by Hugh S. Taylor.

Some chemical aspects of life, by Sir Frederick Gowland Hopkins.

Commercial extraction of bromine from sea water, by Leroy C. Stewart.

Before papyrus—beyond rayon, by Gustavus J. Esselen.

The variety in tides, by H. A. Marmer.

Modern seismology, by F. J. Scrase.

A generation's progress in the study of evolution, by Edwin G. Conklin.

How the fishes learned to swim, by Anatol Heintz.

Curious and beautiful birds of Ceylon, by Casey A. Wood.

The influence of civilization on the insect fauna in cultivated areas of North America, by Roger C. Smith.

Arctic butterflies, by Austin H. Clark.

Grasses, what they are and where they live, by A. S. Hitchcock.

Phototropism: A specific growth response to light, by Earl S. Johnston.

An outline development of highway travel, especially in America, by Carl W. Mitman.

Via Appia in the days when all roads led to Rome, by Albert C. Rose.

Smithsonian archeological projects conducted under the Federal Emergency Relief Administration, 1933-34, by M. W. Stirling.

Indian cultures of northeastern South America, by Herbert W. Krieger.

Commerce, trade, and monetary units of the Maya, by Frans Blom.

Report for 1934.—The report of the Secretary, which included the financial report of the executive committee of the Board of Regents, and will form part of the annual report of the Board of Regents to Congress, was issued in December 1934.

Report of the Secretary of the Smithsonian Institution and financial report for the executive committee of the Board of Regents for the year ending June 30, 1934. 78 pp., 1 pl. (Publ. 3289.)

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 1934. 88 pp., 84 pls. (Publ. 3300.) April 22, 1935.

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 and 7 separates from the Proceedings, as follows:

MUSEUM REPORT

Report on the progress and condition of the United States National Museum for the year ended June 30, 1934. 109 pp.

PROCEEDINGS: VOLUME 83

No. 2972. *Coryneerinus*, a new Devonian crinoid genus By Edwin Kirk. Pp. 1-7, pl. 1.

No. 2973. American muscoid flies of the genera *Ceratomyiella* and *Paradidyma*. By H. J. Reinhard. Pp. 9-43.

No. 2974. Revision of the American two-winged flies belonging to the genus *Cuphocera*. By H. J. Reinhard. Pp. 45-70.

No. 2975. Some fossil corals from the West Indies. By John W. Wells. Pp. 71-110, pls. 2-5.

No. 2976. Fossil hares from the late Pliocene of southern Idaho. By C. Lewis Gazin. Pp. 111-121, figs. 1-5.

No. 2977. Parasites of fishes in the Galveston Bay. By Asa C. Chandler. Pp. 123-157, pls. 6-12.

No. 2978. On the Reptilia of the Kirtland formation of New Mexico, with descriptions of new species of fossil turtles. By Charles W. Gilmore. Pp. 159-188, figs. 6-17, pls. 13-18.

Beginning with volume 83 of the Proceedings, covers for separate papers were omitted, and pages, figures, and plates were numbered

consecutively throughout each volume, instead of each article separately, as has been the practice for many years.

INDEX OF MUSEUM PUBLICATIONS

Under the direction of the Museum editor, work was continued on the index of Museum publications, which has been in progress 2 years. The index is now completed through Bulletin 43 and Proceedings, volume 16. About 30,000 cards were added during the year, making a total of 115,000, exclusive of 79,000 not entered in the master file. The index, in its current form, is available to the curators and others who may have occasion to use it. It is hoped to be able to publish at least some of it by 1946, the Smithsonian Institution Centenary.

PUBLICATIONS OF THE BUREAU OF AMERICAN ETHNOLOGY

The editorial work of the bureau has continued under the immediate direction of the editor, Stanley Searles. During the year one annual report was issued.

Fifty-first Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution, 1933-1934. 8 pp.

Progress was made on verifying the manuscript index of the Bulletins 1-100 of the Bureau, and the index to the six volumes of Schoolcraft's work entitled "Indian Tribes" was well advanced.

FREER GALLERY OF ART PUBLICATIONS

Oriental Studies, No. 2. A descriptive and illustrated catalogue of miniature paintings of the Jaina Kalpasūtra as executed in the early western Indian style. By W. Norman Brown. 4°. 66 pp., 45 pls. (Publ. 3252.) December 14, 1934.

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 annual report for 1932 was issued during the year. The supplemental volumes to Reports for 1931 and 1932 were in press at the close of the year.

REPORT OF THE NATIONAL SOCIETY, DAUGHTERS OF THE AMERICAN REVOLUTION

The manuscript of the Thirty-seventh Annual Report of the National Society, Daughters of the American Revolution, was transmitted to Congress, in accordance with law, March 14, 1935.

ALLOTMENTS FOR PRINTING

The congressional allotments for the printing of the Smithsonian 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, 1936, totals \$25,500, allotted as follows:

Smithsonian Institution.....	\$12,250
National Museum.....	7,050
Bureau of American Ethnology.....	2,000
American Historical Association.....	4,200

Respectfully submitted.

W. P. TRUE, *Editor.*

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, 1935

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. 00

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., bringing the total endowment for general purposes to the amount of----- 1, 106, 803. 19

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

Arthur, James, fund, income for investigations and study of sun and lecture on the sun-----	\$42, 596. 31
Bacon, Virginia Purdy, fund, for a traveling scholarship to investigate fauna of countries other than the United States-----	53, 361. 64
Baird, Lucy H., fund, for creating a memorial to Secretary Baird---	9, 353. 50
Barstow, Frederic D., fund, for purchase of animals for the Zoological Park-----	810. 18
Canfield Collection fund, for increase and care of the Canfield collection of minerals-----	40, 736. 41
Casey, Thomas L., fund, for maintenance of the Casey collection and promotion of researches relating to Coleoptera-----	8, 231. 31
Chamberlain, Francis Lea, fund, for increase and promotion of Isaac Lea collection of gems and mollusks-----	29, 993. 32
Hodgkins fund, specific, for increase and diffusion of more exact knowledge in regard to nature and properties of atmospheric air---	100, 000. 00
Special Research fund, gift, in form of real estate-----	20, 946. 00
Hughes, Bruce, fund, to found Hughes alcove-----	16, 136. 12

Myer, Catherine Walden, fund, for purchase of first-class works of art for the use of and benefit of the National Gallery of Art.....	\$20,189.80
Pell, Cornelia Livingston, fund, for maintenance of Alfred Duane Pell collection	2,571.54
Poore, Lucy T. and George W., fund, for general use of the Institution when principal amounts to the sum of \$250,000.....	65,275.28
Reid, Addison T., fund, for founding chair in biology in memory of Asher Tunis.....	29,968.99
Roebbling fund, for care, improvement, and increase of Roebbling collection of minerals.....	128,537.86
Rollins, Miriam and William, fund, for investigations in physics and chemistry.....	55,727.40
Springer, Frank, fund, for care, etc., of Springer collection and library	14,883.04
Walcott, Charles D. and Mary Vaux, research fund, for development of geological and paleontological studies and publishing results thereof	11,062.72
Younger, Helen Walcott, fund, held in trust.....	50,112.50
Zerbee, Frances Brincklé, fund, for endowment of aquaria.....	810.61
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Total endowment for specific purposes other than Freer endowment.....	701,304.03

The capital funds of the Institution, except the Freer funds, are invested as follows:

Fund	United States Treasury	Consolidated fund	Separate fund	Total
Arthur, James.....		\$42,596.31		\$42,596.31
Bacon, Virginia Purdy.....		53,361.64		53,361.64
Baird, Lucy H.....		9,353.50		9,353.50
Barstow, Frederic D.....		810.18		810.18
Canfield Collection.....		40,736.41		40,736.41
Casey, Thomas L.....		8,231.31		8,231.31
Chamberlain.....		29,993.32		29,993.32
Hodgkins (specific).....	\$100,000			100,000.00
Special Research fund.....			\$20,946.00	20,946.00
Hughes, Bruce.....		16,136.12		16,136.12
Myer, Catherine W.....		20,189.80		20,189.80
Pell, Cornelia Livingston.....		2,571.54		2,571.54
Poore, Lucy T. and George W.....	26,670	38,605.28		65,275.28
Reid, Addison T.....	11,000	14,466.99	4,500.00	29,968.99
Roebbling Collection.....		128,537.36		128,537.36
Rollins, Miriam and William.....		46,227.40	9,500.00	55,727.40
Smithsonian unrestricted funds:				
Special.....			1,400.00	1,400.00
Avery.....	14,000	39,660.24		53,660.24
Endowment.....		162,714.81		162,714.81
Habel.....	500			500.00
Hachenberg.....		4,285.33		4,285.33
Hamilton.....	2,500	429.95		2,929.95
Henry.....		1,288.14		1,288.14
Hodgkins (general).....	116,000	31,942.53		147,942.53
Parent.....	727,640	1,300.23		728,940.23
Rhees.....	590	503.86		1,093.86
Sanford.....	1,100	948.10		2,048.10
Springer.....			14,883.04	14,883.04
Walcott, Charles D. and Mary Vaux.....		11,062.72		11,062.72
Younger, Helen Walcott.....			50,112.50	50,112.50
Zerbee, Frances Brincklé.....		810.61		810.61
Total.....	1,000,000	706,765.68	101,341.54	1,808,107.22

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 \$4,769,362.53. 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.....	\$534,318.17
Court and grounds maintenance fund.....	134,352.68
Curator fund.....	543,728.40
Residuary legacy.....	3,556,963.28
	<hr/>
	4,769,362.53

SUMMARY

Invested endowment for general purposes.....	\$1,106,803.19
Invested endowment for specific purposes other than Freer endowment.....	701,304.03
	<hr/>
Total invested endowment other than Freer endowment...	1,808,107.22
Freer invested endowment for specific purposes.....	4,769,362.53
	<hr/>
Total invested endowment for all purposes.....	6,577,469.75

CLASSIFICATION OF INVESTMENTS

Deposited in the U. S. Treasury at 6 percent per annum as authorized in the U. S. Revised Statutes, sec. 5591.....	\$1,000,000.00
Investments other than Freer endowment (cost or market value at date acquired):	
Bonds (18 different groups).....	\$363,887.25
Stocks (39 different groups).....	398,693.67
Real estate first-mortgage notes.....	41,746.00
Uninvested capital.....	3,780.30
	<hr/>
	808,107.22
	<hr/>
Total investments other than Freer endowment.....	1,808,107.22

Investments of Freer endowment (cost or market value at date acquired) :

Bonds (43 different groups)-----	\$2, 240, 386. 62	
Stocks (31 different groups)-----	2, 156, 825. 38	
Real estate first-mortgage notes-----	38, 500. 00	
Uninvested capital-----	333, 650. 53	
		<u>\$4, 769, 362. 53</u>
Total investments-----		6, 577, 469. 75

CASH BALANCES, RECEIPTS, AND DISBURSEMENTS DURING THE FISCAL YEAR ¹

Cash balance on hand June 30, 1934-----		\$250, 118. 80
Receipts:		
Cash income from various sources for general work of the Institution-----	\$66, 558. 01	
Cash gifts expendable for special scientific objects (not to be invested)-----	49, 096. 04	
Cash income from endowments for specific use other than Freer endowment and from miscellaneous sources (including refund of temporary advances)-----	62, 933. 04	
Cash capital from sale, call of securities, etc. (to be reinvested)-----	99, 592. 16	
Total receipts other than Freer endowment-----		278, 179. 25
Cash receipts from Freer endowment:		
Income from investments, etc-----	\$257, 510. 33	
Cash capital from sale, call of securities, etc. (to be reinvested)-----	1, 176, 081. 31	
Total receipts from Freer endowment-----		1, 433, 591. 64
Total-----		<u>1, 961, 889. 69</u>

Disbursements:

From funds for general work of the Institution:

Buildings, care, repairs, and alterations-----	\$2, 361. 88	
Furniture and fixtures-----	170. 78	
General administration ² -----	24, 163. 12	
Library-----	2, 449. 87	
Publications (comprising preparation, printing, and distribution)-----	16, 507. 36	
Researches and explorations-----	17, 929. 34	
International exchanges-----	4, 864. 63	
		<u>68, 446. 98</u>

¹ This statement does not include Government appropriations under the administrative charge of the Institution.

² This includes salary of the Secretary and certain others.

Disbursements—Continued.

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-----	\$6,265.32	
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) -----	75,497.78	
Reinvestment of cash capital from sale, call of securities, etc-----	133,717.40	
		\$215,480.50

From Freer endowment:

Operating expenses of the gallery, salaries, field expenses, etc-----	57,908.58	
Purchases of art objects-----	136,141.19	
Investments made from gain from sale, etc., of securities-----	278,962.32	
Reinvestment of cash capital from sale, call of securities, etc-----	626,378.05	
		1,099,390.09
Cash balance June 30, 1935-----		578,572.12

Total-----		1,961,889.69

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

Expenditures from general funds of the Institution:

Publications-----	\$16,507.36	
Researches and explorations-----	17,929.34	
		\$34,436.70

Expenditures from funds devoted to specific purposes:

Researches and explorations-----	42,920.24	
Care, increase, and study of special collections-----	12,366.86	
Publications-----	7,323.05	
		62,610.15

Total-----		97,046.85

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 \$883.47.

The Institution gratefully acknowledges gifts or bequests from the following:

Mr. W. N. Beach, for purchase of certain specimens of birds.

Mrs. Laura Welsh Casey, for further contributions to Thomas Lincoln Casey fund, for investigations in Coleoptera.

Mr. Eldridge R. Johnson, further contributions for expenses in connection with deep-sea and other oceanographic explorations.

Research Corporation, further contributions for researches in radiation.

Mr. John A. Roebling, further contributions for researches in radiation.

Mrs. Mary Vaux Walcott, contribution for the publication of special volume of North American Wild Flowers and purchase of certain Alaskan Archeological specimens.

From an anonymous friend, for further investigations in Old World Archeology.

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 appropriations were made by Congress for the Government bureaus under the administrative charge of the Smithsonian Institution for the fiscal year 1935.

Salaries and expenses.....	\$36,475.40
International exchanges.....	41,188.17
American Ethnology.....	56,502.62
Astrophysical Observatory.....	29,774.21
National Museum:	
Maintenance and operation.....	\$137,093.72
Preservation of collections.....	573,407.94
	710,501.66
National Gallery of Art.....	33,087.44
Printing and binding.....	17,500.00
For printing and binding two volumes of that portion of the Annual Report of the American Historical Association devoted to the bibliography, "Writings on American History".....	8,000.00
National Zoological Park.....	199,043.63
	1,132,073.13

There was also an allotment of \$5,600 made for participation by the Smithsonian Institution in the California Pacific International Exposition.

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

AUGUST 19, 1935.

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, 1935, and certify the balance of cash on hand June 30, 1935, to be \$580,472.12 [which includes \$1,900 held in cash at the Institution].

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, 1935, 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, 1935.

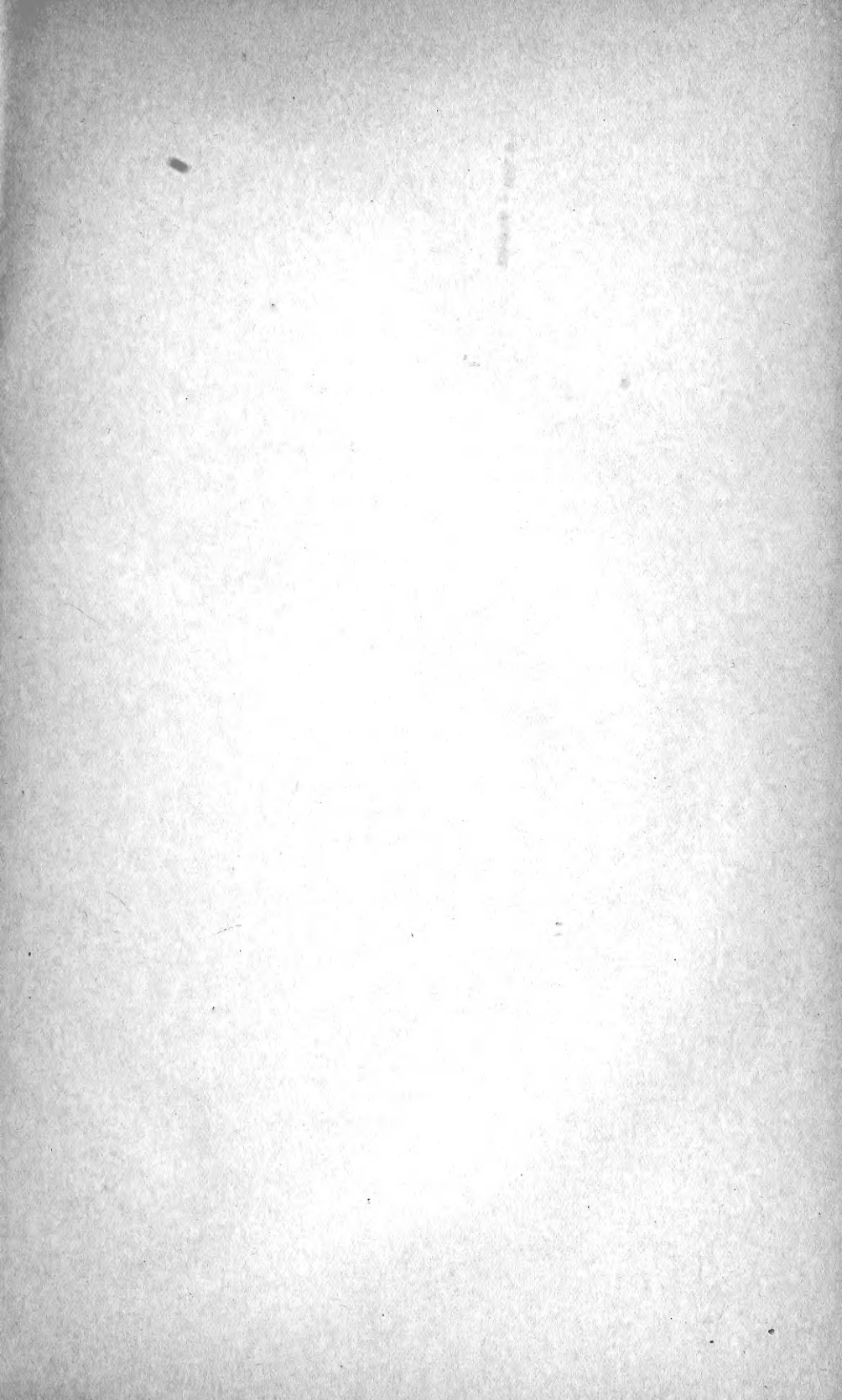
Respectfully submitted.

WILLIAM L. YAEGER & Co.,
WILLIAM L. YAEGER,
Certified Public Accountant.

Respectfully submitted.

FREDERIC A. DELANO,
R. WALTON MOORE,
JOHN C. MERRIAM,
Executive Committee.









SMITHSONIAN INSTITUTION LIBRARIES



3 9088 01296 8475