

THE AMERICAN MUSEUM OF NATURAL HISTORY

SEVENTY-THIRD ANNUAL REPORT
FOR THE YEAR 1941

SERIAL SCIENTIFIC PUBLICATIONS

NATURAL HISTORY, The Magazine of The American Museum of Natural History:

Volumes I-XLVIII, 1900-1941. An illustrated magazine, issued monthly, excepting July and August, devoted to records of scientific research, exploration and discovery, of the development of museum exhibitions and of museum influence on education. Contributors include the scientific staff, explorers and Members of the American Museum, and other eminent naturalists. Issued to all Members as one of the privileges of membership, or on subscription \$3.00 (\$3.50 Canada, South America, foreign); 50c. a copy.

THE JUNIOR NATURAL HISTORY MAGAZINE:

Volumes I-VI, 1936-1941. An illustrated monthly magazine for young readers. \$1.00 a year; 10c. a copy; special rates for schools.

BULLETIN of the American Museum:

Volumes I-LXXVIII, 1881-1941. Scientific records of explorations and collections of the Museum, in Geology, Palaeontology, Mineralogy, Zoology, and, originally, Anthropology. \$4.00-\$10.00 a volume.

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MEMOIRS of the American Museum:

Volumes I-XV, 1893-1930; New Series, I-III, 1912-1921. (Volumes II, IV, V, VII, VIII, X-XV form the Jesup North Pacific Expedition series, Volumes I-XI). Prices range from 75c. to \$18.00 a part.

SPECIAL SCIENTIFIC PUBLICATIONS

A REVIEW OF THE PRIMATES:

By Daniel Giraud Elliot. 1913. A monographic treatise in three quarto volumes. Paper, \$35.00; morocco, \$45.00.

BIBLIOGRAPHY OF FISHES:

By Bashford Dean. 1916-1923. Covers the entire literature of fishes to 1914 and embraces 45,000 titles arranged alphabetically by authors. Three volumes, \$15.00.

THE BASHFORD DEAN MEMORIAL VOLUME:

Article I, 1930, \$1.25; Article II, 1931, 60c.; Article III, 1931, \$1.75; Article IV, 1932, \$2.50; Article V, 1933, \$1.00; Article VI, 1937, \$3.50; Article VII, 1940, \$2.50.

(Publications continued on third page of cover.)

THE AMERICAN MUSEUM OF NATURAL HISTORY



SEVENTY-THIRD ANNUAL REPORT FOR THE YEAR 1941

"For the purpose of establishing and maintaining in said city a Museum and Library of Natural History; of encouraging and developing the study of Natural Science; of advancing the general knowledge of kindred subjects, and to that end of furnishing popular instruction."

THE CITY OF NEW YORK
Issued May 1, 1942

EDITED BY RUTH TYLER

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SEVENTY-THIRD ANNUAL REPORT OF THE PRESIDENT

*To the Trustees of
The American Museum of Natural History
and to the Municipal Authorities of the City of New York*

A GRATIFYING increase in visitor attendance and Museum membership, the completion of many important exhibits, a splendid output of scientific publications and many additions to Museum collections make 1941 a year of important progress. Merely to glance at the contributions of the Scientific, Educational and Administrative Departments to this annual report is to appreciate the extent and immense value of the work carried on in this institution.

Early in the year the trustees, through a Survey Committee, commenced an investigation into the Museum, and this work will be carried on by the Plan and Scope Committee of the Scientific Staff. Important changes in trustee and staff organization are being made to enable the Museum not only to move towards a definite plan of development but to operate more efficiently within its limited budget. In these changes one salient fact is recognized, that the Scientific Staff gives the Museum its importance not only in the fields of natural science but in general public recognition. The great collections, the exhibits, the educational work in schools and colleges all alike must be based upon the highest scientific standard and knowledge, which can come only from the men and women who compose the Scientific Staff. Better to enable this group to work, freely to express itself, and to create, develop and carry out great Museum plans is the important aim of the trustees. Our scientists fully realize that the "ivory tower" aspect of science is a thing of the past, and that the whole work and development of our institution must be integrated with the life of the community and the nation.

This nation is dedicated to the principle of enlightening its citizens—free minds, not closed minds—free search for knowledge, not propagandized thought. Our great museums are repositories for knowledge; they not only germinate free thought but minister to man's insatiable desire to know more about himself and the world. Museums are one of the important social agencies wherein man de-

velops his spiritual outlook, and in the total war in which this country is engaged the spirit of a free people must be nourished.

Concerning the war effort it is interesting to learn that the Scientific Staff is uniquely qualified to provide information for various governmental agencies and invaluable data for our military and naval forces. Thus, the Museum will provide vital information on parasites prevalent in war; the importance of insects in war; rodent disease carriers; the distribution and habits of, and safeguards against, poisonous snakes; illustrations of tests used to determine the fitness of soldiers; the war terrain of various parts of the globe which have been studied and visited in person by our scientists and explorers; descriptions of inhabitants and tribal customs, of flora and fauna; charts of ocean currents in the Caribbean and other waters, and other topics. Of aid to pilots and ocean navigators is our Hayden Planetarium course in celestial navigation. Research conducted by the Museum in past years provides knowledge of marine products useful in war time as well as marine forms dangerous to shipping. Knowledge of Nature's incomparable camouflage system is useful.

The Department of Education, in addition to greatly extending its service within the Museum, is planning the creation of portable school museums to be circulated in the New York area, this work to be done in cooperation with other museums receiving City aid; establishment of "Hobby and Craft Development Centers"; establishment of "Community Museums"; integration of museum materials to illustrate various aspects of war areas; and organization of a radio series dealing with the relation of natural science to war.

Above all, the Museum is a house of refuge from the stress of wartime existence and as such will continue to provide relaxation, enjoyment and inspiration for an ever increasing number of people.

On behalf of President F. Trubee Davison, who is on active war service, and the Board of Trustees, I wish to express our deepest appreciation to the many hundreds of people who have given generously of their time, effort and means to carry forward the work of the institution.

A. PERRY OSBORN

First Vice-President

TEN YEAR DEVELOPMENT PROGRAM

The Ten Year Development Program in 1941 continued its policy of raising annual contributions for maintenance as well as funds for special purposes. The Women's Century Fund Committee operated for the fourth year under the chairmanship of Mrs. Winthrop W. Aldrich; the Men's Committee was under the joint chairmanship of Messrs. Harold Benjamin Clark and Charles S. McCain. The Executive Committee continued its work throughout the year in obtaining funds from foundations and special donors.

The officers of the Ten Year Development Program are: Mr. F. Trubee Davison, Chairman; Mr. A. Perry Osborn, Executive Chairman; Mrs. Winthrop W. Aldrich, Messrs. Harold Benjamin Clark, S. Sloan Colt, and Charles S. McCain, Vice-Chairmen; Mr. E. Roland Harriman, Treasurer; and Mr. Reuel C. Estill, Secretary.

The following is a final statement of receipts and allocations for 1941:

RECEIPTS:

Foundations	10 Gifts	\$28,225.00
Trustees	19 "	14,676.97
Women's Century Fund	453 "	23,030.50
Men's Committee	499 "	34,791.50
Special Purposes	2 "	3,000.00
		<hr/>
983 Gifts		\$103,723.97

ALLOCATIONS:

Program Expenses	\$15,451.56
Department of Education	10,000.00
Membership Department	7,614.00
Special Purposes	8,000.00
Endowment	1,000.00
Museum Maintenance	61,658.41
	<hr/>
	\$103,723.97

REPORT OF THE DIRECTOR

During the year 1941 the effects of the second World War were increasingly felt by the American Museum as well as by all other scientific institutions.

For instance, there was no geographical exploration anywhere in the world during 1941. Even intensive scientific exploration, in which the American Museum has always been a leader, was reduced to the minimum, for there were few regions where it was either possible or profitable to carry on work. In those countries not actually at war the restrictions against travel by foreigners made expeditions difficult, and there was always the possibility that the season's collections would be lost or destroyed in transit. The Museum had only ten expeditions in the field during 1941 while in 1938 we sponsored thirty-five.

The emphasis during the year was necessarily placed on completing projects which were under way rather than inaugurating new work. Eight great groups were finished and opened to the public. The Pearl Divers Group, made possible by the late Edith Haggin DeLong and Mr. Templeton Crocker, shows a beautiful water garden of the South Seas. The Australian Group, a gift of Mr. Archer M. Huntington, in the Birds of the World Hall, was completed, as was the Fijian Group in the Whitney Memorial Hall. The Mako Shark and Great Barrier Reef Groups are worthy additions to the Hall of Fishes. The Colobus Monkey and Mandrill Groups were added to the gallery of the Akeley Hall of African Mammals.

It was felt necessary, because of the possibility of air raids, to transfer to places of safety those types and exceptional rarities in the collections which could be moved, and this was accomplished without accident.

The Trustees feel, however, that the Museum owes a peculiar service to the public during war time and that it should keep its major collections intact and functioning as far as possible. Therefore virtually no specimens were removed from exhibition.

Under the inspiration and direction of Mrs. Margaret Mack, in charge of the Book Shop, a Book Fair was held at the Museum in the latter part of November. This new departure was a conspicuous success and brought to the Museum many distinguished speakers as well as an appreciative public.

The membership enrollment showed a gratifying advance of 1,324 over 1940; the attendance increased 36,386; the Book Shop sales were

substantially higher, and the Planetarium had a paid attendance of 13,390 more than the previous year.

These figures indicate that the public is more than ever appreciative of the relaxation, pleasure and profit to be obtained within the Museum doors.

The death of the veteran explorer and palaeontologist, Dr. Walter Granger, is recorded with deep sorrow. Dr. Granger had been in the American Museum for fifty-one years. At eighteen he became a member of the Department of Preparation, then transferred to the Department of Vertebrate Palaeontology where he was Curator of Fossil Mammals at his death. Without question he was one of the finest fossil collectors in the world, and he stood at the top of his profession as a palaeontologist. Although he was a member of many field expeditions in various parts of the world, perhaps his greatest contribution was as Second-in-Command of the Central Asiatic Expeditions. Under his direction the fossil collections of the expedition opened a new book in the history of life upon the earth. His whole life was lived in and for the American Museum of Natural History, and his death leaves a vacancy in the Museum and in the hearts of his friends which can never be filled.

In this annual report we record again our continued appreciation of the hearty cooperation the Museum always receives from the Mayor, the Commissioner of Parks and other officials of the city administration.

We are also indebted to the Work Projects Administration for a large corps of typists, artists, laboratory workers, mechanics and other helpers who contributed a valuable share of our accomplishments for the year.

THE SCIENTIFIC DEPARTMENTS

ASTRONOMY AND THE HAYDEN PLANETARIUM

Attendance in 1941 showed a decided gain over 1940:

Paid admissions.....	300,577
Classes, free.....	<u>66,774</u>
Total.....	367,351

The Guest Relations Bureau, under the Department of Public and Press Information and the direct supervision of Mrs. Anna H. Schafer, is pleased to report an increase, in spite of a severely curtailed budget, not only in the yearly attendance but in group reservations and group rate classifications. Many group reservations were made which combined the Planetarium show with luncheon in the Museum Restaurant as well as the "Tour Behind the Scenes," a feature which proved very popular and lent publicity to both the Planetarium and the Museum. The special programs for Boy and Girl Scouts initiated in 1940 met with enthusiastic response and resulted in an increase of 4,444 in attendance of Scouts and Leaders. The printing of folders was considerably reduced, and no paid services for distribution were contracted for. Nonetheless the Planetarium enjoyed a larger tourist attendance, partly through free advertising, secured by the Guest Relations Bureau, in printed matter distributed by the Hotel Associations, and partly through the activities of a larger number of tourist agents selling Planetarium tickets.

The topics of the sky shows were changed monthly except in the case of "Mysterious Mars" which ran during October and November. Thirty-one shows a week were given, including the daily one o'clock free show for New York City school children. In addition, ten paid special lectures were given in the Planetarium for the following groups: Weems System of Navigation, "N" Club of the U. S. Power Squadron, U. S. Naval Reserve Midshipmen's School, U. S. Naval Reserve Officer's School of Indoctrination, and Columbia University.

The Weems System of Navigation gave the usual courses in dead reckoning (air and marine), celestial navigation and meteorology, and special courses for Naval Reserve officers about to enter active service.

These improvements were added to the equipment: a new silhouette horizon for "End of the World" show; a new coelostat, used in connection with the Kiddle telescope to project the sun's image on the

Planetarium dome; several back-drops for tableaux, and a new stage and back-drop for the Christmas carol singers; special wide-angle projectors for use in the Christmas show.

The following exhibits were installed: a duplicate of the Time Capsule buried at the site of the New York World's Fair, presented by Westinghouse Electric and Manufacturing Company; the World Clock, formerly on exhibit at the World's Fair, presented by the International Business Machines Corporation; during December, a copy of Dickens' "Christmas Carol" and a facsimile of the manuscript, lent by Mrs. W. H. Barton, and an exhibit of Tobys (caricatures of Dickens' characters), lent by F. A. Coles.

In November *The Sky*, official publication of the Planetarium, incorporated with *The Telescope* to form *Sky and Telescope*. Offices were moved to the Harvard College Observatory, but the magazine continues as the official bulletin of the Hayden Planetarium.

Dr. Fisher contributed the introduction and the chapter on astronomy for "The Marvels and Mysteries of Science," and revised his *Guide Leaflet*, "Meteor Crater, Arizona." Mr. Rice was co-editor of the "New Handbook of the Heavens." Members of the staff continued to contribute articles to magazines and newspapers. Dr. Fisher also continued teaching his course in astronomy at New York University, and Mr. Barton taught an introductory course in astronomy at Queens College.

Over the counter sales and mail order business in the Book Corner were larger than in 1940.

The Amateur Astronomers Association held its usual meetings, classes in astronomy and mathematics, and telescope-making, and conducted several enjoyable field trips and outings for its members. Mr. Charles A. Federer, Jr., Secretary of the Association for many years, resigned, and the new Secretary is Mr. George V. Plachy.

The Junior Astronomy Club conducted fifteen meetings, continued the publication of the mimeographed magazine, the *Junior Astronomy News*, and held a successful program of outdoor observations.

GEOLOGY AND MINERALOGY

Mr. Herbert P. Whitlock, after twenty-three years as Curator of this Department, retired from the Curatorship on July 1, and was simultaneously appointed by the Trustees Curator Emeritus and Research Associate in Jade. His period of service was marked by

many notable additions to the mineral collection, the development of the gem collection to its present standing of the leading publicly displayed gem collection of the world, and by the rebuilding of the Morgan Hall. He was instrumental in the acquisition of the Drummond Collection and its installation. During his tenure the Museum also received the William Boyce Thompson bequest, with the mineral and jade collection to come later.

Dr. Frederick H. Pough was appointed Acting Curator of the Department, beginning July 1.

The mineral section received two important gifts during the year: three opal necklaces from Mrs. Edith Lounsbery Worden and Mr. Richard Lounsbery, and one six-inch flawless crystal ball in memory of Katherine H. Straub. In addition to these, numerous mineral specimens were acquired and placed on display.

Progress was made on the completion of the Hall of Petrology and Economic Geology, and new models were installed. A case dealing with the geology of New Zealand was placed in this hall.

The meteorite collection, on display in the Planetarium, received twelve additions of falls not previously in the collection, and a new installation of greater educational value was commenced.

The seismograph was partially repaired, and better records are now being obtained. Several large earthquakes were observed at the moment of reception, and the Department was able to make the first announcements of the shocks.

Two papers by Dr. Pough appeared in *The American Mineralogist*: "On the Occurrence of Willemite" and "The Formation of Jarosite on Pyrite Ornaments." A jewelers' dictionary commenced in 1940 was continued by *The Jewelers' Circular-Keystone*. That magazine published a paper on American synthetic emeralds, also by Dr. Pough. In addition to these publications, material in the mineral collection was the subject of one paper in *The American Mineralogist* by Clifford Frondel. Popular publication by the Department was also extensive. Dr. Pough wrote a series of birthstone articles for *Natural History*, and Mr. Whitlock wrote one jade article.

Mr. Whitlock presented his annual series of gem and jade talks in a spring and fall series. Dr. Pough gave several lectures to mineralogical clubs, presented a scientific paper before the Mineralogical Society at its annual meeting in Boston, and continued his monthly class for jewelers under the auspices of the Gemological Society of America.

Material was lent to many individuals and institutions for research purposes. The Department supplied a birthstone-photographs display for the Book Fair, a loan display to the New Jersey Mineralogical Club's show in Plainfield, New Jersey, and, as a gift, a collection of ancient gem stones to the Metropolitan Museum of Art to aid in their classification of specimens. The Babylonian cylinder seals of the Morgan Library were identified for the author of a monograph on that collection.

Because of the war, the irreplaceable type specimens of the mineral collection were removed and packed to protect them from any possible bomb damage. Further measures will be taken next year.

MICROPALAEONTOLOGY

During 1941 this Department published twelve volumes of 1,200 pages each on the Foraminifera and three supplements of 1,400 pages each. Approximately 18,000 photographic and photostatic prints were added to the departmental archives during the year, and more than 80,000 new entries were made in the various indexes.

Forty-one oil companies, fifty-two universities and colleges, thirty-eight individual micropalaeontologists and fourteen miscellaneous institutions joined in supporting the Department in 1941.

PALAEONTOLOGY

The event most vitally affecting this Department in 1941 was the untimely death on September 6 of Dr. Walter Granger, Curator of Fossil Mammals. Dr. Granger had been in Museum service over fifty years, was one of the first members of the Department when it was organized in 1891, and a leader in its growth and development. His personal outstanding achievements in palaeontology are recognized throughout the world. Plans are being developed for reconditioning the fourth floor of the southeast pavilion as a memorial to him.

During the year a rare skeleton of an Eocene mammal, *Ectoconus*, with a restoration by Mr. John C. Germann, was placed on exhibit in the Tertiary Mammal Hall. Mr. Germann also painted a new restoration of *Scarrittia*. Several minor exhibits were added to the educational series among the mammal groups.

In the reptile halls many casts of types and better skulls and skeletons of Pterosaurs were assembled to round out the history of this important order. A new restoration of the skull of *Leptoceratops*, including original fragments, was added to the skeleton.

Mr. William O. Sweet donated a fund for the creation of a large mural of the flying reptiles, to be placed opposite the north end of the Cretaceous Hall, as a memorial to his father Frank Royden Sweet. This mural, by Messrs. C. W. Astori and A. Brown, is nearly complete and will be unveiled early in 1942.

Plans have been made for murals for the entire Jurassic Hall. The sketch for the first section, representing American Triassic and Jurassic periods, by Mr. Thomas Voter, is nearing completion.

In the Hall of Invertebrates reconditioning continues, and the section devoted to the Cambrian period is finished. Attention should be called to a new exhibit of fossil cycads. The type specimens of this division were segregated and made available for comparison. Renewal of the grant from the Emergency Committee in Aid of Displaced Foreign Scholars continued the services of Dr. Otto H. Haas and will permit the completion of his monograph on the Angola cephalopod faunas in our collection.

An expedition led by Dr. Granger, and including Mr. Albert Thomson and Dr. E. H. Colbert, made a representative collection of Oligocene mammals, with some specimens better than those already in our collection, in the Big Badlands of South Dakota. The expedition was cut short by Dr. Granger's sudden death.

Dr. Brown collected an incomplete but rare dinosaur skeleton from the Kootenai Cretaceous beds near Great Falls, Montana, and an exhibition slab of star-shaped impressions of an unknown marine creature from the Upper Cretaceous.

The proceeds from the sale to the Carnegie Museum of a duplicate skeleton of *Tyrannosaurus rex* will be set aside as an endowment for the Department, the interest to be used for expeditions and the purchase of specimens.

In research and publication three *Bulletins*, fifteen *Novitates* and many other papers in outside journals were published by members of the Department. Several additional articles were submitted for publication and are in the editor's hands.

Among important specimens acquired by gift are a restoration of the Devonian trilobite *Terataspis grandis* from Mr. Chauncey J. Hamlin; a partial dinosaur skeleton from Jasper Park, Alberta, the northernmost point in North America at which dinosaurs have been found, presented by Mr. R. C. Sibley; a fossil cetacean skull, jaws and partial skeleton from the Sociedad Geologica del Peru in Lima; and from the Carter County Geological Society, Ekalaka, Montana, a new Troödont skull from Montana.

A sculptor, three other artists, a translator and three typists assigned to this Department by the W.P.A. completed some very creditable work.

LIVING INVERTEBRATES

The year 1941 was one of departmental accomplishment. Three marine expeditions brought back important results. Mr. Armstrong participated in the "Askoy" Expedition to the Bay of Panama from January to June in collaboration with Dr. Murphy of the Department of Ornithology. From the standpoint of this Department, important extensive collections of crustaceans and other invertebrates were secured, the latter numbering nearly 5,800 specimens.

During January and early February, Curator Miner, accompanied by Messrs. Francis L. Jaques and Wyllis Rosseter Betts, Jr., visited the west coast of Florida, and with the cooperation of Mr. George Emmanuel, obtained data and photographs for the proposed Sponge Fisheries mural for the Hall of Ocean Life.

The departmental boat "Thetis," acquired during 1940, was outfitted early in the year and adapted for Museum oceanographic work. From October to early December the First "Thetis" Expedition was carried out on the west coast of Florida near Tarpon Springs. Much work was done with diving helmets on the sea bottom to secure specimens of the sponges and their associates, as well as observations for the construction of the proposed Sponge Divers Group. Many Kodachrome photographs of the freshly brought up material were secured, while collections of considerable extent were brought back to the Museum. The "Thetis" proved to be an important and effective acquisition to the Department. Cordial cooperation through personal services and contributions was rendered on this expedition by Mr. George Emmanuel of Tarpon Springs, Florida, Mr. and Mrs. Betts, and Mr. and Mrs. Edwin Ayers, as well as by the Woods Hole Oceanographic Institution.

In the Hall of Ocean Life, the Pearl Divers Group was completed and placed on exhibition June 10. The building and installation of this group were due to the generosity of the late Edith Haggin DeLong, while the field work was made possible by Mr. Templeton Crocker and other friends of the Museum.

For the Darwin Hall, seven new glass models of jelly-fishes were prepared by Mr. Mueller, progress was made with the illustrated alcove labels, and Dr. George H. Childs completed a fine anatomical

model of the protochordate, *Balanoglossus*, which fills a gap in the series utilized by high schools and colleges.

The most important additions to the scientific collections are those already mentioned as the results of the "Askoy" and "Thetis" Expeditions. Mr. Frank J. Myers donated seventy-four mounted specimens of rotifers, including important types and paratypes. This is now the largest and finest collection of mounted rotifers in the world. The scientific collections were increased by about 2,300 specimens, including 421 species of which 128 were new to the collections. The general invertebrate collections, other than mollusks, now number more than 86,500 specimens and include 1,578 types.

Associate Curator Van Name continued work on his important new monograph on the ascidians and advanced it considerably toward publication. Staff Associate Armstrong pursued his investigations of the crustaceans of the study collections in the intervals between his scientific trips, while Research Associate Frank J. Myers is preparing a new paper on rotifers, and Professor Aaron L. Treadwell continued work on the annulates. Dr. Henry Russell of the Museum of Comparative Zoölogy, Harvard University, studied our Porto Rican gastropods, and Mr. William Clench of the same institution has also been working on the gastropod collections of the "Askoy" Expedition.

One *Novitates* by John C. Armstrong, one by William J. Clench, two by Aaron L. Treadwell, one by Melbourne Ward, and a *Bulletin* article by Ralph W. Chamberlin were issued by the Department in 1941.

ENTOMOLOGY

It is pleasant to be able to report that welcome contributions of time, money and specimens made it possible for us to continue our insect work with little abridgment of either quantity or quality. Thanks to financial help from one of our friends, an important vacancy in our staff was fortunately filled by the appointment of Mr. Mont A. Cazier as assistant curator of beetles. The position, left vacant by the retirement of Mr. F. E. Watson, of assistant in charge of our work with butterflies and moths has not yet been definitely filled, but financial contributions from several friends enabled us to secure, at least temporarily, the part-time services of Mr. William P. Comstock in this connection. We deeply regret the death of Mr. Charles W. Leng, for years a Research Associate on our staff.

No field work of importance was done, but we received through 201 gifts approximately 38,000 specimens. Our study collections now contain approximately 1,735,000 specimens, of which roughly 398,000 are moths or butterflies; 346,000 are beetles; 288,000 are flies; 242,500 are ants, bees or wasps; and 232,500 are spiders and their relatives. Owing to the danger of bombing in New York City we moved our thousands of type specimens to the safer place provided by the Museum.

Cooperating with entomologists in other institutions, we have out on loan to them 126 lots of specimens to aid in their researches, and we have in the Museum 122 lots of specimens borrowed by us for our researches or sent to us for identification. In addition to the men formally listed as Research Associates in this Department a large number of entomologists used our collections of insects. This was, of course, helpful to them, but it was also of even greater service to us because their work here very definitely improved our collection.

The Museum published fourteen papers (198 pages) on entomology in which 205 new forms were described. A popular book by Curator Lutz based on the 1,400 species of insects collected in a suburban yard was published by G. P. Putnam's Sons.

The reconditioning of the Hall of Insect Life progressed during the year, but the hall still lacks satisfactory illumination.

LIVING AND EXTINCT FISHES

Near the exhibit of the giant New Zealand marlins in the Fish Hall stands the Great Barrier Reef Group, a result of the Michael Lerner-Australian Expedition of 1939. Although a small group, it conveys a delightful semblance of reality, showing above the water line an inviting coral beach with wind-swept palms and strange loblolly trees, while beneath the surface the varied inhabitants of the lagoon dart or poke about, or descend in a raiding band upon the peaceful coral gardens. The group is the gift of Mr. Michael Lerner and was mounted by the Department of Arts, Preparation and Installation under the direction of this Department. Bali fishes collected by the same expedition were reported on by Mr. Nichols in *Novitates* and illustrated by Mrs. K. G. Van Cortlandt, a volunteer artist.

Other gifts of the year by Mr. Michael Lerner are the new mounted Mako Shark Group and the interior lighting for several of the larger

exhibition cases, as well as three motion picture expedition films. Another excellent film was presented by the New Zealand government.

A very rare, large oceanic fish, *Luvarus imperialis*, of strange form and color was studied by Messrs. Nichols and Helmuth, and a life-size model was prepared by the Department of Arts, Preparation and Installation.

Continued cooperation with the International Game Fish Association resulted in the publication of a most useful paper by Miss LaMonte and Mr. Donald Marcy, dealing with the earliest known and later stages of the marlins and swordfishes, the weights and other records for the several species, the distinguishing field marks, food habits and the like.

The final article of the Bashford Dean Memorial Volume, by Dr. Bertram G. Smith, dealing with the natural history and external development of *Heterodontus japonicus*, the Japanese Bullhead Shark, was in press in December. It is adorned with many beautiful color plates drawn in part by Dean himself and in part by his artist, and reproduced with funds provided by Mrs. Bashford Dean and Miss Harriet M. Dean.

The Bashford Dean Library was transferred to new cases in Dr. Dean's old office, which has been designated by the Trustees as the Bashford Dean Memorial Library and Research Room in Ichthyology. Dr. E. W. Gudger, editor of the Dean Memorial Volume, continues in charge of the Dean Library and as Honorary Associate in Ichthyology.

Good progress was made by Miss Wilmann during the year on the Bibliography of Fishes Fossil and Recent. Thanks to a grant from the American Philosophical Society, this project is also being assisted by the work of Dr. Libbie H. Hyman.

As a result of three months' work during the summer, Dr. Gregory completed the manuscript of four chapters, dealing with fossil and living fishes, for his "Comparative Study of Evolution."

The reinstallation of the extensive collection of fossil fishes, which includes many important types described by Newberry, Cope, Dean, Hay, and others, was nearly completed under the direction of Mr. G. Miles Conrad, whose skilled services were lent by the Department of Comparative Anatomy. With the aid of two W.P.A. assistants and by means of equipment supplied by the W.P.A. itself, Mr. Conrad furnished a small laboratory for casting fossil fish types, for preparing "cleared totals," fish skeletons, and other specimens needed for

researches in the Department. Partly due to these facilities, he made encouraging progress in his systematic study of the highly diversified vertebral column of the families of extinct and living bony fishes.

HERPETOLOGY

This Department attempts to advance the knowledge of herpetology through publications and lectures, by cooperation with other institutions or organizations, and by attractive exhibits illustrating biological principles. Collections of live animals made by staff members and specimens received from other sources enabled us to illustrate such diverse principles as the loss of limbs in burrowing lizards, protective coloration in ground-dwelling lizards, intimidation mechanisms in snakes, speciation and diversity within genera, and desert adaptations. Exhibits of living specimens were supplied for the Aquarium Society show, and for the Book Fair living specimens were used to contrast fact with fabulous tales, illustrated with cartoons, to dispel widely held erroneous beliefs concerning reptiles.

Publications include one dealing with the reactions of rattlesnakes to ophidian enemies, and an article on the Hopi Snake Dance by Mr. C. M. Bogert. Mr. William Heifetz published a taxonomic review of the fringe-footed lizards. Two longer papers await the completion of excellent drawings by Messrs. Dimitri Alexandroff and Sidney Aberman, whose careful work also illustrates a paper on cobras now in press. Three more papers await publication, including preliminary descriptions of new forms in an exceptionally interesting collection from Sonora, Mexico, received in November. In addition, Dr. A. F. Carr, Jr., of the University of Florida, cooperated in the study of certain turtles in the Sonoran collection, and his paper describing a new chelonian is being published in *Novitates*.

A manuscript dealing with coecilians was left by the late Curator, Dr. G. Kingsley Noble, and, after preliminary preparation for its publication was undertaken, was turned over to the foremost authority on coecilians, Dr. E. R. Dunn, for editing.

Mr. Bogert gave two lectures outside the Museum and presented a paper at the annual meeting of the American Society of Ichthyologists and Herpetologists at Gainesville, Florida. At this meeting he was elected Vice-President of the Society. Also, he was made a fellow of the New York Academy of Sciences.

Despite adverse conditions for field work, no fewer than 1,010 specimens were received from various sources. The "Askoy" Expedition

contributed a useful collection from South America which included two species of lizards that comprise the entire reptilian fauna of Malpelo Island. Dr. John A. Moore presented valuable collections of frogs, and Mr. Carl F. Kauffeld donated excellent material secured in Arizona. Mr. Harry C. James of the Trailfinder School for Boys shipped us many extremely useful specimens from the less-frequented portions of the western states. Numerous other smaller gifts comprised an impressive total.

Exchanges adding several previously unrepresented forms to the collection were made with the Museum of Comparative Zoölogy. Dr. Dunn's work with coecilians made it possible to revise our entire representation of this remarkable order of limbless amphibians, and revealed that our material represents the most complete single assemblage of coecilians in any museum.

Cooperation with other institutions was marked by the loan of 1,549 specimens to research workers in sixteen institutions, while scientists from Cornell University, University of Michigan, University of Florida, Haverford College, Field Museum, Philadelphia Zoological Garden and several local institutions were given accommodations to study our collections.

More than 3,000 catalogue entries were made during the year, making a total of more than 115,000. In this work, as well as in preparation of bibliographies, rearrangement of the collections necessitated by vast additions, construction of exhibits, and preparation of manuscripts, the Department had the volunteer assistance of Mrs. Allan Cameron, Miss Bessie Matalas, Messrs. Edward Dorson and William Heifetz and the personnel provided by the W.P.A. Our thanks to all these individuals and to the several friends of the Department whose contributions are mentioned above, are gratefully tendered.

EXPERIMENTAL BIOLOGY

In response to an evident visitor interest in dynamic and explanatory illustrations of animal behavior the Department continued to concentrate its exhibitional activities upon the construction and display of groups demonstrating and interpreting the behavior patterns of various species.

Motion pictures of the courtship and parental behavior of cichlid fishes were shown four times a day. These films were taken in the Department's experimental laboratories as part of a comprehensive

investigation of fish behavior. Play in young animals was illustrated with a display of juvenile rats in the pre-adolescent stage of life during which running, wrestling, and mock-fighting occur almost continuously.

Living snakes, birds and mammals were exhibited in small habitat groups stressing the ecological factors involved in each animal's life history.

In the microprojection booth various species of living microscopic forms of life were shown under high magnification.

To illustrate experimental apparatus and techniques used in our experimental laboratories for the study of animal behavior, an exhibit was assembled showing three methods of measuring and recording activity. Fish, chickens and rats were shown in special tanks and cages equipped with automatic devices which recorded general activity.

To increase the interpretive values of the Hall of Animal Behavior three cases of transilluminated panels were installed. Life scenes illustrating care of the young by fish, reptiles, birds and mammals were painted on glass, lighted from behind, and mounted in a large case. A second series of pictures demonstrated feeding behavior, and a third showed illustrations of social behavior at each level of the evolutionary scale.

The construction, installation and maintenance of all new exhibits were facilitated by the generous assistance of the W.P.A.

Experimental investigations dealing with the social and reproductive behavior of fish, amphibia, birds and mammals were conducted in the laboratory. Continuation of the Department's experimental program was made possible by financial support from the Committee for Research on Problems of Sex, National Research Council, and by the Mammalian Research Fund established and maintained by Mrs. Anthony Bliss.

Twelve scientific reports were published by members of the Department. Eight additional articles were accepted for publication. Dr. Beach published five papers, Dr. Etkin one, Dr. Hyman three. In keeping with a plan to complete and publish as much as possible of the researches of the Department's late Curator, Dr. G. Kingsley Noble, one article by Dr. Noble and Mrs. Borne and two papers by Dr. Noble and Mr. Greenberg were also published. Manuscripts in press include six by Dr. Beach and one each by Dr. Hyman, Dr. Etkin, Dr. Noble and Mr. Wurm, and Dr. Noble and Mr. Zitrin.

Dr. Hyman completely rewrote her widely-used text "Comparative Vertebrate Anatomy."

In an extension of the Department's policy of collaboration with other educational institutions, students and faculty members from the New York City high schools, New York University, and City College were given space and facilities for research on problems of animal behavior. Two graduate students at New York University carried out research investigations in partial fulfillment of the requirements for a Master's and Doctor's degree respectively.

Dr. Charles M. Breder, Jr., Director of the New York Aquarium, was made a Research Associate and is temporarily occupying office and laboratory space in the Department.

Mr. Jacques David Wimpfheimer, acting as a special field assistant for the Department, conducted an expedition to Ecuador to obtain a number of South American murine opossums. Mr. Wimpfheimer brought back to the Museum thirty-seven *Marmosa symondsi* to be employed as experimental subjects in the furtherance of the Department's investigations of the phylogeny of instinctive behavior.

ORNITHOLOGY

In the Hall of the Birds of the World, the Australian Group donated by Mr. Archer M. Huntington was completed. In the Whitney Memorial Hall, the Fijian Group was completed, and work advanced on the New Caledonia, Barrier Reef, and Solomon Islands Groups. In the Roosevelt Memorial, the exhibit of local birds' nests and eggs was completely remodeled, and part of the mounted birds renovated. In the Whitney Gallery of Bird Art, loan exhibitions of paintings by Courtenay Brandreth and Allan Brooks were shown. A sculptured vulture by Mateo Hernandez was added to the exhibits, the gift of Mrs. Esther Slater Kerrigan. In the Hall of Biology of Birds, the alcove showing the origin and relationships of birds was finished. The opposite alcove of "Birds and Man" is virtually completely planned, and much material is ready for early installation. Work has progressed on some exhibits designed for other alcoves in this hall. Assistance by the W.P.A. in this hall is gratefully acknowledged.

Early in the year Dr. Murphy led an expedition, accompanied by Mr. John C. Armstrong of the Department of Living Invertebrates, and Mr. J. G. Correia, preparator, in the schooner "Askoy" to the coasts of northwestern South America and Panama. Although the

expedition was largely non-ornithological, a small but important collection of birds was brought back. Mr. Gilliard, with Mr. Dillon, Department of Arts, Preparation and Installation, sailed for Colombia on November 21 to explore unknown Mt. Macarena, but by late December the party had not reached the mountain. In Australia, Mr. G. Reid Henry was employed to continue work for the Whitney South Sea Expeditions. Mr. Amadon obtained a small collection of birds and mammals in Utah in September. Dr. Rand transferred his headquarters to Florida with the research project of Mr. Richard Archbold.

Research progressed steadily, and thirty-six papers were published by members of the Department, including descriptions of 115 new species and subspecies, beside numerous reviews and other brevities. Many lectures and talks were given variously during the year. Dr. Murphy received the honorary degree of Doctor of Science from Brown University and the Hutchison Medal of the Garden Club of America, was elected Honorary Member of the Garden Club of Southampton, and reelected President of the Biological Laboratory at Cold Spring Harbor. Dr. Chapin was reelected President of the American Ornithologists' Union. Dr. Mayr was elected Honorary Member of the German Ornithologists' Union.

The Department was saddened by the death of its friend and benefactor, Mr. Philip B. Philipp, Research Associate in Oology. During the year his fine oological library was generously presented to the Department by Mrs. Philipp.

Among departmental visitors was welcomed Mr. W. H. Phelps of Caracas, Venezuela, who brought recent important collections for comparative study and left on deposit the types of the new birds found in the series.

Consolidation and arrangement of the collections advanced materially. Types and many of the greater rarities were removed for storage elsewhere during wartime emergency. With W.P.A. assistance, gratefully acknowledged, nearly 4,000 specimens were catalogued, Mr. Philipp's books card-catalogued, an index drafted for twenty-two volumes of specimen catalogues, about 1,800 pamphlets bound, several thousand tray labels and filing cards written, and voluminous other typescript prepared.

As in former years considerable curatorial time was devoted to the extensive loans requested by other institutions, cooperation with governmental and conservation agencies, replies to queries by tele-

phone, letter, and personal call, and identification of material submitted for examination.

Accessions totaled over 5,000 specimens, including numerous important gifts which cannot be itemized here. It is greatly regretted, also, that lack of space prevents fuller details and adequate assignment of credit for the various activities here briefly sketched.

MAMMALOGY

The Department was able to put one expedition into the field during 1941. Thanks to the generosity of Mr. Childs Frick, Messrs. Peter E. Crowe and Gilbert C. Anthony collected 587 specimens of mammals in Alberta and British Columbia during the period from the middle of June to early September.

Specimens were obtained, however, from Uganda (gift of Mr. G. H. E. Hopkins) and Costa Rica (purchase), and the total accessions for the year amounted to 1,703.

Additional field work was made possible, moreover, by the establishment of the Archbold Biological Station at Lake Placid, Florida, where the personnel of Archbold Expeditions plan to study the behavior of certain mammals and birds. An advisory board composed of Museum personnel was appointed to assist in planning a broad program of biological research.

The staff was able to carry out extensive studies and research upon collections, with the result that the list of publications for the year is a long one.

Curator Anthony studied the mammals of the Vernay-Cutting Burma Expedition and published an eighty-six page report in a special volume of the *Zoological Series of Field Museum of Natural History* published in honor of Wilfred Hudson Osgood.

Associate Curator Goodwin completed his studies and a manuscript on the mammals of Honduras, and started a preliminary study of the mammals of Costa Rica in conjunction with Director Juvenal Valerio Rodriguez of the Museo Nacional de Costa Rica and the Minister of Education of Costa Rica.

Assistant Curator Tate made good progress on his research on the mammals of the Archbold expeditions to New Guinea, resulting in the publication of eight papers, a total of 131 pages of text. In addition, he spent considerable time at the New York Botanical Garden preparing labels for the botany of the habitat groups in the Akeley Hall of African Mammals.

Assistant Curator Carter assisted the Curator with the identification of the Vernay-Cutting Burma collection, and made a good start on the identification and report upon the mammals collected by the Vernay-Hopwood Chindwin Expedition, also of Burma. In addition, he spent some time rearranging the mounted specimens in the Hall of Primates.

Assistant Curator Hill was co-author with Mr. Carter of a *Bulletin* article on the mammals of Angola. Dr. Hill also concluded his studies on the larger mammals of the Vernay-Lang Kalahari Expedition, and this necessitated a study of the material at Field Museum collected on the same expedition. The manuscript was handed in as a contribution to the *Bulletin*. He identified and prepared a report on the mammals collected in 1938 by the New Mexico Expedition, and began a detailed study of the harvest mice of western Kansas, Nebraska, Oklahoma, New Mexico, and Colorado. In collaboration with Mr. H. C. Raven he studied the relationships of the rare Hamlyn's guenon from the Kivu of Africa; the results are to appear with a summary review of the classification of the guenons, a group of monkeys.

The total number of papers published by the staff during the year is nineteen, and nine completed manuscripts await publication.

The customary routine care of material in the Department went forward as usual, assisted by several W.P.A. workers. Because of provisions against damage by air raids it was necessary to segregate and provide special protection for types and rare material.

The development of exhibition for the Department was quite satisfactory for 1941. Work was begun on the Cheetah Group, the only unfinished section in the Akeley Hall of African Mammals. The habitat groups in the Hall of North American Mammals are progressing steadily toward completion, and the Hall is now well on the way toward an early opening to the public.

ANTHROPOLOGY

During 1941 fifty-three patrons of the Museum contributed collections, three were returned by expeditions, and two were secured in exchange. All these accessions were significant, but among the largest were an unusual series of ceremonial masks from West Africa donated in memory of George R. Dyer; a number of prehistoric textiles from Peru, in memory of Giles Whiting; a series of old Navajo textiles presented in memory of Major General Robert Alexander; a collection of Plains Indian feather work from the New York State Conservation

Department; a Chilkat blanket from Mr. Pell W. Foster; a series of casts of rare archaeological objects from the National Museum of Mexico, and a collection from the Indians of French Guiana presented by the Swedish Ethnographical Museum, Stockholm.

New installations were made in the Hall of Asiatic Peoples, Races of Man Hall, the Eskimo section and in the several halls devoted to the American Indian. An exhibit was arranged to illustrate the influence of white contact upon the aboriginal way of life among the Woodland Indians, using a new type of labeling and presentation. New dioramas were completed, representing the Natchez Indians, a ceremonial Whaler's Shrine, an Eskimo Burial, and the winter village of the Loucheux Indians of northwest Canada. An exhibit showing the world distribution of the living types of man was installed in the Races of Man Hall.

In cooperation with the University of Alaska, excavations were made at Point Hope, Alaska, where a new culture was discovered in 1940. Several hundred house sites were excavated, and a comprehensive series of artifacts collected which, with the specimens secured in 1940, will suffice for a comprehensive report upon the site. The field work was directed by Dr. Froelich Rainey and supported by the Voss Fund.

Associate Curator Harry L. Shapiro visited Point Hope to investigate the anthropology of the living Eskimo and to excavate the prehistoric burials. Approximately 500 graves were opened, and an adequate collection for determining the type of man responsible for the ancient culture and the relation of this type to later inhabitants of Alaska was sent back to the Museum. This field unit was supported by the Physical Anthropology Fund, supplemented by the Voss Fund.

Curator N. C. Nelson spent the summer excavating several caves and shelters on the Crow Indian Reservation. The artifacts suggest non-pottery-making nomadic hunters of no great antiquity. This project was supported by the Voss Fund.

Early in the year Dr. Gordon Ekholm returned from a long-term archaeological exploration project in Mexico. The first half of 1941 was spent in completing, with financial assistance from the Northern Mexico Archaeological Fund, a report upon these investigations. Later in the year Dr. Ekholm returned to Mexico under a grant from the Institute of Andean Research to continue his archaeological investigations.

Assistant Curator Junius Bird spent the first part of 1941 preparing

reports upon his previous field work in South Dakota, Labrador, and southern Chile. Later in the year he began archaeological studies along the coastal region of northern Chile, and advance reports state that two shell heaps were sectioned which combined give stratified deposits of considerable depth. The work is financed by the Institute of Andean Research, supplemented by the Voss Fund.

Assistant Curator Margaret Mead, with the assistance of Dr. Gregory Bateson, completed a preliminary study of photographic materials relating to culture behavior, made possible with funds from the Committee for the Study of Dementia Praecox and from the Macy Foundation.

During 1941 the Department continued, as in previous years, to enjoy the invaluable assistance of several W.P.A. workers.

COMPARATIVE AND HUMAN ANATOMY

Three exhibits were installed during 1941: the first is a new representation of the "Family Tree of Man"; the second illustrates what is known regarding the extinct fossil "man-apes" (Australopithecinae) of South Africa; the third sets forth the outstanding features of New Zealand, its geographic relations, its geology and resultant landscapes and some of its remarkable fauna and flora. This last exhibit is the gift of Mr. Michael Lerner.

The Government of New Zealand continues, in spite of the war, to send us valuable series of specimens for the future New Zealand Hall.

Detailed plans for a new exhibit illustrating the evolution of the brain from lower vertebrates to man were prepared and presented by Dr. Frederick J. Kiesler, director of the laboratory of the Department of Architecture, Columbia University, and scenic director for the Juilliard School of Music. In this proposed exhibition the best arts of the theatre are applied in order to bring out the appropriate facts in effective sequence and to build them up into a cumulative message of great dramatic force.

From the results of its numerous special investigations the Department worked out plans for the following exhibits: "The Film of Life" (G. M. Conrad, *Natural History*, November, 1941); "Grandfather Fish and his Descendants" (William K. Gregory, *Natural History*, October, 1941); "Fins into Limbs"; "The Bridge that Walks"; "South Africa's Missing Links"; "The Dawn of Intelligence" (in cooperation with other Departments); a revision and reinstallation of "Men of the Old and New Stone Ages."

This partial list does not include the larger plans for the Australian and New Zealand exhibits, which were the objectives of three Museum expeditions from 1921 to 1939, but other Museum commitments, past and pending, with resulting uncertainty as to available Museum halls, continue to block substantial progress in this direction.

The staff of the Department therefore urgently request the Trustees and the Acting Director to take prompt and effective steps to rectify this situation and to set free the Department's energies for the advancement of its exhibition program.

Both our exhibition program and our special research problems continue to benefit by close cooperation with the Departments of Zoology and Geology of Columbia University. For example, during the past two years Dr. Schaeffer discovered the steps by which a mosaic of small bones in the ankle of the earlier land-living vertebrates was slowly transformed into a complex hinge-joint of mammalian and human type. His results were published as a *Bulletin* article (Fossil Vertebrate Series) in November.

The Department's researches in comparative osteology proved to be of unexpected practical value when the District Attorney of Bronx County sent in for examination and determination a large number of broken and burned pieces of bone found in a furnace. These were minutely studied by Mr. Raven and were proved to be those of a young human being. His testimony in court remained unshaken under cross-examination and contributed materially to the conviction of the murderer.

Mr. Raven's studies on the skeleton of a rare beaked whale (*Mesoplodon densirostris*) were completed and sent to *Novitates* for publication.

Several assistants from the W.P.A. gave valuable services in the Department's laboratories, offices and library, and we also had the help of an artist recommended by the National Refugee Service.

MUSEUM SERVICES

EDUCATION

During 1941 the groundwork was laid by members of the Department for increased attention to defense needs of the community and for acceleration in the development of pertinent services in case of war. At the expense of decreasing attention to less essential services, many services were built up and strengthened and many plans developed. The result was that with the actual outbreak of war in December the Department was enabled to swing without interruption into activities pointed by wartime needs.

Significant among the 1941 activities of the Department were the following: an analysis of every departmental activity to determine what mechanization was possible to increase efficiency; the partial allocation of a special non-recurring grant of the Carnegie Corporation of New York to the furnishing of these mechanized appliances, resulting in the highest degree of mechanical efficiency the Department has ever known; a large increase, through the use of the same generous grant, in the supply of both income and non-income producing distributable materials; the continuation and extension, through a generous grant from the Hayden Foundation, for the study of the relationship of the Museum to Boys' Clubs, a study started in 1940 under a grant from Mr. William R. Coe; a still further increase in the production of distributable materials by the W.P.A. technical staff; a significant increase in the number of persons taught in the halls by reason of an extension of the music programs to gallery talks and demonstrations; a decrease in pupil attendance caused by the reallocation of the W.P.A. teaching service; and a further decrease in pupil attendance by reason of the limitation of all school excursions to those not more than ten minutes' travel from the school buildings.

The last two significant statements, connected with changes due to the war, raised within the last month of the year tremendous problems of museum relationships to the public schools. A joint committee of the schools and of the museums that serve the schools met during that period and drew up new and far-reaching plans for cementing, coordinating and extending the museum services. The results of these plans belong properly in the 1942 report of the Department.

The significant statistics of departmental service follow:

REACHED BY STAFF BY DIRECT CONTACT

Attendance, lectures and instruction in Museum.....	306,318
Attendance, lectures and instruction outside Museum..	39,373
Attendance and instruction (pupils), Planetarium....	68,544
Attendance and instruction, Bear Mountain Trails...	471,500
Attendance, Fair of Science and Engineering.....	20,569
Attendance, music.....	4,600

Total reached by direct contact..... 910,904

REACHED BY DEPARTMENTAL CIRCULATION OF MATERIALS

Motion picture distribution.....	4,958,163
Lantern slide distribution.....	8,147,023
Distribution of circulating collections.....	10,435,647

Total reached by circulation..... 23,540,833

TOTAL REACHED BY ALL EDUCATION SERVICES. 24,451,737

PUBLIC AND PRESS INFORMATION

An exact estimate of publicity clipping returns for the Museum, Hayden Planetarium and *Natural History* shows a nation-wide coverage of 311 standard newspaper pages in news, features and magazine articles. Of this volume, publicity for the Museum amounted to 185 pages; for the Planetarium 90 pages; and for *Natural History* 36 pages. A large part of this coverage, principally for the Museum and Planetarium, took the form of photographic reproductions, from single photographs accompanying syndicated articles released by news and photographic services to full page rotogravure lay-outs in national magazines and in Sunday newspapers in New York and other large cities.

In bringing the Museum and Hayden Planetarium activities to the attention of the radio public, the Department carried on an extensive and varied radio program:

"New Horizons," 30 minutes, 140 stations (CBS and entire Western Hemisphere coverage) with an audience of over 10,000,000.

"Exploring Space," 10 minutes, 40 stations (CBS). Audience of more than 1,000,000. Hayden Planetarium sponsored program telling the stories of American astronomers.

"This Wonderful World," 30 minutes (WOR-Mutual). Children's quiz program in which the Planetarium and Museum are closely associated. A capacity audience attends these broadcasts, now held

in the WOR studios, and hundreds of schools and children are eager to participate in the program.

"This is the Life," 30 minutes (WABC and coast-to-coast network). Popular broadcasts from the anthropology halls in the Museum with various curators as guests.

In addition to these regular radio programs, the Department arranged and produced numerous special events broadcasts dealing with both Museum and Planetarium activities. Foremost among these special broadcasts were "Arrival of Spring" (CBS), "Eclipse of Moon," and "Close Approach of Mars" (WOR-Mutual).

Arrangements were also made for guest appearances of Museum personnel on the General Electric Science Forum of the Air (WGY), and on the popular Mary Margaret McBride CBS and NBC broadcasts. Leading radio commentators, such as Lowell Thomas, Gabriel Heatter, Edwin C. Hill, John Allen Wolf, Lorraine Sherwood (to mention a few), made extensive use of material furnished by this Department.

The activities of the Guest Relations Bureau are reported under Astronomy and the Hayden Planetarium.

LIBRARY

In the life of any organization there comes a time when a survey of growth, resources and activities must be made. The Museum Library has been going through such a period. In 1941 a report of the research resources was made for inclusion in a general New York City survey by R. B. Downs of New York University. The year also saw a continuation of the disposal of borderline material which considerations of space and weight no longer permit retaining. We trust that when conditions improve new shelving will be made available so that the collections can be entirely rearranged to allow for the normal growth and functioning of the Library.

The survey of rare items speeded up preliminary choice of material for war storage. Cooperation between the Museum and the natural history branch of the Columbia University Library will help to maintain working facilities during the period of hostilities.

In spite of the almost completely interrupted relations with scientific Europe, items of outstanding interest were added to the collections, including the five-volume set of Purchas, "Hakluytus Posthumus." The Library was most fortunate in receiving, through the generosity of Mrs. Edward S. Harkness, six oil paintings of Indian

chiefs, made on the Long Expedition to the Rocky Mountains in 1819-1820, presumably by Samuel Seymour.

The important work of cataloguing increased this year; some 8,000 cards were made, including those for the interesting collection of books on oriental religion and iconography presented to the Museum by Mr. William B. Whitney some time ago.

The Library continued to benefit by the help of a W.P.A. worker in the bindery, and by a worker from the National Refugee Service who made an excellent beginning in compiling a bibliography of South American archaeology.

BOOK SHOP

Gross sales increased from \$23,654.69 in 1940 to \$26,409.02 in 1941. There were 23,471 sales, an increase of 2,959 over 1940. This past year the Book Shop emphasized primitive crafts, both domestic and exotic.

A Book Fair of scientific books for the layman promoted by the Book Shop, the Museum at large and the publishing trade in the last part of November achieved considerable success.

PRINTING AND PUBLISHING

The Museum Press operated at its fullest working capacity throughout the year, even requiring considerable overtime work.

Our outstanding achievement in 1941 was the completion, on December 13, of the printing of Volume II of the Proboscidea Memoir by Henry Fairfield Osborn, under the devoted and able editorship of Miss Mabel Rice Percy. This comprised 900 quarto pages, with 125 additional copies of Chapter 22 (100 pages) reprinted for author's separates.

The output of the Press amounted to 4,805,127 printed pieces. Routine job printing increased not only in volume but in variety, many new forms, charts, posters, tickets and announcements having been introduced.

The 470 pages printed included lecture booklets, catalogues, new telephone directory, price lists, twelve issues of *The Junior Natural History Magazine* (207,300 copies), twelve issues of the *School Nature League Bulletin* (35,000 copies) and *Annual Reports* of the President and of the Pension Board.

The final article of the Bashford Dean Memorial Volume was set in type and made ready for paging.

The regular force, consisting of foreman, keyboard and caster operator, two compositors and two pressmen, was assisted by four competent W.P.A. workers.

Anthropological Papers, Bulletin, Novitates, Natural History and publications issued by the Committee on Popular Publications were, as heretofore, sent to outside printers.

SCIENTIFIC PUBLICATIONS

Scientific papers published by the American Museum during 1941 follow:

Bulletin:

- The birds of Mt. Auyan-tepui, Venezuela. E. Thomas Gilliard. **77**, pp. 439-508, 7 figs., 1 map.
- The mammals of Angola, Africa. John Eric Hill and T. Donald Carter. **78**, pp. 1-211, pls. 1-17, 36 figs.
- Results of the Archbold expeditions. No. 34. Development and enemy recognition of the curve-billed thrasher *Toxostoma curvirostre*. A. L. Rand. **78**, pp. 213-242.
- New American Syrphidae. C. H. Curran. **78**, pp. 243-304.
- A study of *Orycteropus gaudryi* from the island of Samos. Edwin H. Colbert. **78**, pp. 305-351, 25 figs.
- Results of the Archbold expeditions. No. 35. A review of the genus *Hipposideros* with special reference to Indo-Australian species. G. H. H. Tate. **78**, pp. 353-393, 5 figs.
- The morphological and functional evolution of the tarsus in amphibians and reptiles. Bobb Schaeffer. **78**, pp. 395-472, 21 figs.
- On a collection of millipedes and centipedes from northeastern Peru. Ralph V. Chamberlin. **78**, pp. 473-535, 230 figs.
- Results of the Archbold expeditions. No. 39. A review of the genus *Myotis* (Chiroptera) of Eurasia, with special reference to species occurring in the East Indies. G. H. H. Tate. **78**, pp. 537-565, 2 figs.
- Results of the Archbold expeditions. No. 40. Notes on vespertilionid bats of the subfamilies Miniopterinae, Murinae, Kerivoulinae, and Nyctophilinae. G. H. H. Tate. **78**, pp. 567-597, 4 figs.
- Ticholeptinae, a new subfamily of Oreodonts. C. Bertrand Schultz and Charles H. Falkenbach. **79**, pp. 1-105, 17 figs.

Anthropological Papers:

- Eskimo prehistory: the Okvik site on the Punuk islands. Froelich G. Rainey. **37**, pp. 453-569, 37 figs.
- Textile fibers used in eastern aboriginal North America. A. C. Whitford. **38**, pp. 1-22.

American Museum Novitates:

- Results of the Archbold expeditions. No. 31. New rodents and marsupials from New Guinea. G. H. H. Tate and Richard Archbold. **1101**, 9 pp.

American Museum Novitates (continued):

Results of the Archbold expeditions. No. 32. New and interesting birds from New Guinea. A. L. Rand. 1102, 15 pp.

The pes of *Bauria cynops* Broom. Bobb Schaeffer. 1103, pp., 7 4 figs.

New *Brachyura* from the Gulf of Davao, Mindanao, Philippine Islands. Melbourne Ward. 1104, 15 pp., 30 figs.

Terrestrial flatworms from the Canal Zone, Panama. Libbie H. Hyman. 1105, 11 pp., 17 figs.

Pseudodynerus, a neotropical complex of eumenine wasps (Hymenoptera, Vespidae). J. Bequaert. 1106, 10 pp., 1 fig.

Four new fishes from western China. J. T. Nichols. 1107, 3 pp., 3 figs.

Studies of Peruvian birds. No. XXXVI. The genera *Elaenia* and *Myiopagis*. John T. Zimmer. 1108, 23 pp.

Studies of Peruvian birds. No. XXXVII. The genera *Sublegatus*, *Phaeomyias*, *Camptostoma*, *Xanthomyias*, *Phyllomias* and *Tyranniscus*. John T. Zimmer. 1109, 25 pp.

A revision of *Coelacanthus newarki* and notes on the evolution of the girdles and basal plates of the median fins in the Coelacanthini. Bobb Schaeffer. 1110, 17 pp., 11 figs.

African Tachinidae-III. C. H. Curran. 1111, 11 pp.

A new *Galidia* (Viverridae) from Madagascar. G. H. H. Tate and A. L. Rand. 1112, 1 p.

New neotropical Tachinidae (Diptera). C. H. Curran. 1113, 5 pp.

The genus *Arugisa* in the United States, with the description of a new species (Lepidoptera: Phalaenidae). A. Glenn Richards, Jr. 1114, 4 pp., 7 figs.

A new species of *Metalectra* from Florida (Lepidoptera: Phalaenidae). A. Glenn Richards, Jr. 1115, 2 pp., 4 figs.

Birds collected during the Whitney South Sea expedition. XLIV. Notes on the genus *Lalage* Boie. Ernst Mayr and S. Dillon Ripley. 1116, 18 pp., 1 fig.

New fossil Leporidae from Mongolia. J. J. Burke. 1117, 23 pp., 9 figs.

The affinities of the Borhyaenidae. George Gaylord Simpson. 1118, 6 pp.

Some Carib Indian mammal names. George Gaylord Simpson. 1119, 10 pp.

The Eocene of Patagonia. George Gaylord Simpson. 1120, 15 pp.

A new *Peromyscus* from western Honduras. G. G. Goodwin. 1121, 1 p.

Results of the Archbold expeditions. No. 33. A new race of quail from New Guinea: with notes on the origin of the grassland avifauna. A. L. Rand. 1122, 2 pp.

The species of *Hoplophoneus*. George Gaylord Simpson. 1123, 21 pp.

A monograph of the genus *Trigonurus* (Coleoptera: Staphylinidae). Richard E. Blackwelder. 1124, 13 pp.

New species of neotropical Hesperidae (Lepidoptera: Rhopalocera). E. L. Bell. 1125, 10 pp., 20 figs.

Studies of Peruvian birds. No. XXXVIII. The genera *Oreotriccus*, *Tyrannulus*, *Acrochordopus*, *Ornithion*, *Leptopogon*, *Mionectes*, *Pipromorpha*, and *Pyrocephalus*. John T. Zimmer. 1126, 25 pp.

Studies of Peruvian birds. No. XXXIX. The genus *Vireo*. John T. Zimmer. 1127, 20 pp.

American Museum Novitates (continued):

- A new crocodilian from the Lance formation. Charles C. Mook. **1128**, 5 pp., 4 figs.
- The land Mollusca of the Solomon Islands (Succineidae, Bulimulidae and Partulidae). William J. Clench. **1129**, 21 pp., 13 figs.
- The function of saber-like canines in carnivorous mammals. George Gaylord Simpson. **1130**, 12 pp., 4 figs.
- Discovery of jaguar bones and footprints in a cave in Tennessee. George Gaylord Simpson. **1131**, 12 pp., 3 figs.
- The dentary of *Syllomus crispatus* Cope. Charles T. Berry. **1132**, 2 pp., 2 figs.
- Birds collected during the Whitney South Sea expedition. XLV. Notes on New Guinea birds. VIII. Ernst Mayr. **1133**, 8 pp.
- Contribution to a revision of neotropical Mydaeini (Diptera: Muscidae). Fred M. Snyder. **1134**, 22 pp.
- The osteology and relationships of *Archaeomeryx*, an ancestral ruminant. Edwin H. Colbert. **1135**, 24 pp., 6 figs.
- Large Pleistocene felines of North America. George Gaylord Simpson. **1136**, 27 pp., 11 figs.
- The Caridea and Stomatopoda of the second Templeton Crocker-American Museum expedition to the Pacific ocean. John C. Armstrong. **1137**, 14 pp., 4 figs.
- Polychaetous annelids from the New England region, Porto Rico and Brazil. Aaron L. Treadwell. **1138**, 4 pp., 12 figs.
- New species of polychaetous annelids from the vicinity of Galveston, Texas. Aaron L. Treadwell. **1139**, 3 pp., 10 figs.
- Results of the Archbold expeditions. No. 36. Remarks on some Old World leaf-nosed bats. G. H. H. Tate. **1140**, 11 pp.
- Results of the Archbold expeditions. No. 37. Notes on oriental *Taphozous* and allies. G. H. H. Tate. **1141**, 5 pp.
- Results of the Archbold expeditions. No. 38. Molossid bats of the Archbold collections. G. H. H. Tate. **1142**, 4 pp.
- Some new and interesting Neuroptera in the American Museum of Natural History. Nathan Banks. **1143**, 5 pp.
- Birds collected during the Whitney South Sea expedition. XLVI. Geographical variation in *Demigretta sacra* (Gmelin). Ernst Mayr and Dean Amadon. **1144**, 11 pp., 1 chart.
- Contributions to the paleontology of the Lebanon mountains, Republic of Lebanon. Part I.—A cenomanian pelecypod fauna from Hajula. H. E. Vokes. **1145**, 13 pp., 15 figs.
- Report on some arachnids from Barro Colorado island, Canal Zone. W. J. Gertsch. **1146**, 14 pp., 33 figs.
- New American spiders of the family Clubionidae. I. W. J. Gertsch. **1147**, 20 pp., 53 figs.
- New American spiders of the family Clubionidae. II. W. J. Gertsch. **1148**, 18 pp., 54 figs.
- A giant rodent from the Oligocene of South Dakota. George Gaylord Simpson. **1149**, 16 pp., 4 figs.

American Museum Novitates (continued):

- A new Oligocene insectivore. George Gaylord Simpson. 1150, 3 pp., 1 fig.
- New American syrphid flies (Diptera). Frank M. Hull. 1151, 3 pp.
- Birds collected during the Whitney South Sea expedition. XLVII. Notes on the genera *Halcyon*, *Turdus* and *Eurostopodus*. Ernst Mayr. 1152, 7 pp.
- Seventeen new birds from Venezuela. William H. Phelps and E. Thomas Gilliard. 1153, 17 pp., 1 map.
- One new, and other labroid fishes from Bali. J. T. Nichols. 1154, 8 pp., 12 figs.
- Mounted skeleton and restoration of an early Paleocene mammal. George Gaylord Simpson. 1155, 7 pp., 6 figs.
- A Miocene sloth from southern Chile. George Gaylord Simpson. 1156, 6 pp., 1 fig.

POPULAR PUBLICATIONS

During 1941 the following *Guide Leaflets* and special publications were issued: "Pearl Divers" by Roy Waldo Miner, "Canyons Under the Sea" by H. E. Vokes, "A Sacred Almanac of the Aztecs" (limited edition) by George C. Vaillant, a book of sixteen post cards, "Indians of the Americas," and a set of eight separate post cards of the Roosevelt Memorial Hall.

The following *Guide Leaflets* were reprinted: "Our Common Butterflies" by F. E. Watson and F. E. Lutz (with a new cover), "How Old is the Earth?" by H. E. Vokes (a previous *Guide Leaflet* completely rewritten under new authorship), "Pocket Guide to Museum Exhibits" (sixth revised printing), and "Meteor Crater, Arizona," by Clyde Fisher.

The Committee, under the Chairmanship of Dr. Roy W. Miner, continued to care for the stock, filled mail orders and, as far as time permitted, carried on a promotion campaign among libraries throughout the country. A gradual increase in general sales was noted.

NATURAL HISTORY Magazine

A seven per cent gain in circulation over 1940 marks *Natural History's* largest increase in recent years and raises the circulation to the highest point in its history, 30,097.

In the production of the magazine, an increase in the cost of paper amounting to \$2,192.76 over the allotted sum presented the greatest problem. This was the largest item in a general increase in production costs of \$3,520.04.

A gross income of \$8,457.59 from advertising in *Natural History* was realized although at the present stage of the development of the advertising department this represents a substantial net loss which should be easily overcome in the near future.

Against these losses, the Membership Secretary spent less money than last year to achieve a most gratifying increase of revenue from circulation. The budget for 1941 provided \$16,300 for circulation expenses, with the intention of filling approximately 4,500 vacancies that would occur during the year through death and resignation. In other words, the budget was gauged to hold the circulation at the existing level. Actually, not only were all losses replaced at an expenditure of \$16,284.51, but 2,049 additional new members were secured, raising the circulation by that number. The income from these new subscribers (\$3.00 each in the case of direct solicitation and \$2.40 each in the case of agency subscriptions) improved the immediate financial situation greatly and makes the financial record of *Natural History* for 1941 considerably better than it was in 1940.

The renewal rate, which represents the percentage of readers induced to continue their subscription during the coming year, stands at 83.5 per cent, a figure that is attained by few magazines.

THE JUNIOR NATURAL HISTORY MAGAZINE

Subscriptions to *The Junior Natural History Magazine* increased steadily during 1941 and, beginning with September, the school sales more than doubled any previous records. As a result the magazine showed a substantial profit for the year. Dorothy Lee Edwards continues as editor, and Charles J. O'Connor as circulation manager.

CONSTRUCTION, INSTALLATION AND OPERATION

ARTS, PREPARATION AND INSTALLATION

Concentration of departmental activities resulted in the creation of eleven major habitat groups in 1941: in the African Hall, Colobus Monkey, and Mandrill; in the North American Mammal Hall, Mountain Lion, Grizzly Bear, Alaska Brown Bear, White Sheep, Musk-ox, and Grant Caribou; in the Whitney Wing, Birds of the Fiji Islands; in Birds of the World Hall, Australian Group; in the Hall of Fishes, Barrier Reef Group.

Decorative wall treatments were designed and executed at the east end of the African Hall mezzanine, in the six sky panels of the Whitney Wing and in the tonal coloration of the North American Mammal Hall. Very substantial progress was achieved in the preparation of mounted specimens, backgrounds and accessories for eight other habitat groups now under construction, with the result that the full completion of the African Hall and the partial opening to the public of the North American Mammal Hall are anticipated early in 1942.

A new feature was added to the Geology Hall in the form of the New Zealand Synoptic Exhibit, presenting data and material collected by the Michael Lerner-American Museum Expedition to New Zealand and Australia.

For the Department of Anthropology ten miniature groups illustrative of the life and culture of the American Indian were painstakingly executed, the replica of a Mexican tomb was assembled, and a detailed scale model of the entire Mexican Hall was built to serve as a guide in the rearrangement of the collections.

Numerous temporary and incidental displays and designs were also created.

The current program of preparation of osteological material, tanned and study skins, models and casts, for purposes of preservation and classification, was maintained at a high level of output.

In Wyoming, Messrs. Wilson and DeLucia collected data, accessories and background studies for the Mule Deer Group; in Florida, Mr. Jaques painted sketches for the Sponge Fisheries Group; in British Columbia, Mr. Mason gathered a supply of tundra moss for the Osborn Caribou Group; in Alberta, Mr. Rockwell served as field collaborator on the R. K. Mellon Expedition; and in South America,

Mr. Dillon acted as preparator of zoological material collected in the mountain region of Colombia.

GENERAL SUPERINTENDENT

Personnel in this Department, in addition to its usual routine duties in operation and maintenance, completed all case construction and other work in the North American Mammal Hall with the exception of the north and south corridors. In the Auditorium the projection booth was renovated; the projection screens were rearranged, and considerable improvement was effected in the sound system. The New York City Park Department W.P.A. unit rebuilt the Auditorium stage.

Numerous new exhibits were installed, and alterations or general renovation were made in the custodian's locker rooms, staff dining room, several offices, the Jurassic Hall in preparation for a new mural, the Bashford Dean Memorial Room and at many other locations throughout the buildings. Exhibit lighting was improved, and alternating current equipment installed for a limited use. Studies and estimates were completed for remodelling and improving the Mexican and Fish Halls.

An air raid warden unit for the Museum was established, under the direction of the Custodian, to which one hundred and six employees volunteered.

Attendance records for 1941 were:

General attendance.....	1,163,318
Lectures, meetings, special exhibits, concerts, etc....	455,447
Total (exclusive of the Planetarium).....	<u>1,618,765</u>

This is an increase of 36,386 over 1940.

The restaurant was patronized by 61,667 persons, and the cafeteria accommodated 135,992 children during the year. The cafeteria was closed during July, August and September as an economy measure.

The Emergency Aid Room gave treatment to 4,253 persons.

REPORT OF THE TREASURER

AUDITORS' REPORT

To the Board of Trustees of
The American Museum of Natural History,
New York, N. Y.

We have examined the statement of income and expenditures (on a cash basis) of the budgetary and special funds of THE AMERICAN MUSEUM OF NATURAL HISTORY for the year ended December 31, 1941. In connection therewith we examined or tested the recorded cash receipts and disbursements of such funds for the six months ended December 31, 1941, by methods and to the extent we deemed appropriate.

The recorded cash receipts and disbursements for the six months ended June 30, 1941 were examined by Messrs. Adams and Becker and their report upon such examination has been submitted to us.

In conformity with the Museum's usual practice, the income for the year 1941 and cash balance on deposit at December 31, 1941, as shown in the statement of income and expenditures, include cash receipts of \$124,812.82 which, while considered by the Museum to be applicable to the year ended December 31, 1941, were actually received and deposited in the bank up to January 28, 1942. Similarly cash receipts amounting to \$152,204.48 considered to be applicable to 1940 but received and deposited in 1941 have been excluded from the statement.

In our opinion, based upon such examination and upon such report of other accountants, and except as stated in the immediately preceding paragraph, the following statement sets forth the income and expenditures on a cash basis of those funds designated by the Museum as budgetary and special funds, for the year ended December 31, 1941, and the balance of cash on deposit as at that date.

LYBRAND, ROSS BROS. & MONTGOMERY

New York, April 3, 1942.

THE AMERICAN MUSEUM OF NATURAL HISTORY

STATEMENT OF INCOME AND EXPENDITURES OF BUDGETARY AND SPECIAL FUNDS

(ON A CASH BASIS)

FOR THE YEAR ENDED DECEMBER 31, 1941

	Budgetary Funds				Special Funds
	City Maintenance Account	General Account	Morris K. Jesup Fund	Totals	
Income:					
Appropriation from the City of New York	\$493,363.17			\$ 493,363.17	
Income from invested funds		\$354,193.40	\$232,696.46	586,889.86	\$28,615.55
Income from trust funds		30,473.41		30,473.41	
Contributions of Trustees, members, foundations and others		74,311.30		74,311.30	170,516.05
Membership fees		45,330.00		45,330.00	
Sales, subscriptions, fees, film rentals, guiding and lecture service, etc.		10,391.68	2,417.43	12,809.11	23,969.95
Transferred from Capital Funds:					
For rehabilitation of exhibition halls		5,019.76		5,019.76	
For cost of museum survey		5,000.00		5,000.00	
Transferred from Special Funds, contribution of income from Public Education department		5,133.90		5,133.90	
	<u>\$493,363.17</u>	<u>\$529,853.45</u>	<u>\$235,113.89</u>	<u>\$1,258,330.51</u>	<u>\$223,101.55</u>
Expenditures:					
Administration and operation	\$463,350.09	\$383,223.07		\$ 846,573.16	\$ 1,706.49
Contributions to Natural History Magazine		21,014.35		21,014.35	
Scientific and research	16,313.00	86,021.73	\$143,478.14	245,812.87	159,738.59
Printing, books and publications		19,439.97	14,839.30	34,279.27	2,277.91
Arts, preparation and installation		2,740.57	73,796.45	76,537.02	57,007.78
Education	13,700.08	61,369.01		75,069.09	20,485.58
Transfer to Capital Funds for reinvestment, income on Boyce Thompson Funds					4,431.01
Contribution to General Account, income from sales, rentals, etc. of Public Education department					5,133.90
	<u>\$493,363.17</u>	<u>\$573,808.70</u>	<u>\$232,113.89</u>	<u>\$1,299,285.76</u>	<u>\$250,781.26</u>
Excess of expenditures over income		\$ 43,955.25	\$ 3,000.00	\$ 40,955.25	\$ 27,679.71
Surplus or deficit at January 1, 1941		47,975.65		47,975.65	200,947.39
Surplus or deficit at December 31, 1941		91,930.90	3,000.00	88,930.90	173,267.68
Portion of total bank loan of \$275,000 allocated to general fund		120,529.05		120,529.05	
Contributions for 1942 received in advance		2,655.00		2,655.00	
Cash balances, December 31, 1941		\$ 31,253.15	\$ 3,000.00	\$ 34,253.15	\$173,267.68
Cash balances, as above:					
Budgetary funds				\$ 34,253.15	
Special funds				173,267.68	
Add:					
Permanent working fund, City Maintenance Account				15,000.00	
Portion of bank balance not applicable to above funds				2,963.56	
Cash on deposit, December 31, 1941, in The National City Bank of New York				<u>\$225,484.39</u>	

E. ROLAND HARRIMAN, *Treasurer*

REPORT OF THE SECRETARY

MEMBERSHIP

The close of 1941 marked the highest active membership enrollment in the history of the institution—26,779 members from every state in the United States and practically every foreign land. Augmenting this constantly growing list of members, approximately 3,300 libraries, universities, secondary schools, learned societies and individuals have become non-member subscribers to *Natural History*.

The Membership Department also functioned as the circulation department for *The Junior Natural History Magazine*. This publication attained a phenomenal circulation of approximately 50,000 during the year.

June 4 was the Thirteenth Annual Members' Visiting Day. Over a thousand members and guests attended and were taken "behind the scenes" by a corps of Museum guides. A brief report of the progress made during the year was submitted by Director Roy Chapman Andrews.

Grateful thanks are accorded the personnel of the W.P.A. assigned to the Membership Department for their valued and effective services during 1941.

The membership enrollment according to classes is as follows:

Associate Members.....	21,023	Honorary Life Members.....	80
Annual Members.....	3,881	Fellows.....	119
Sustaining Members.....	236	Honorary Fellows.....	14
Corresponding Members.....	26	Patrons.....	226
Supporting Members.....	23	Associate Benefactors.....	66
Contributing Members.....	19	Associate Founders.....	27
Life Members.....	1,010	Benefactors.....	21
Endowment Members.....	8		

THE BOARD OF TRUSTEES

At the annual meeting of the Board on January 13 the following officers were elected: President, F. Trubee Davison; First Vice-President, A. Perry Osborn; Second Vice-President, Cleveland E. Dodge; Treasurer, E. Roland Harriman; Secretary, Clarence L. Hay. Messrs. Cornelius V. Whitney, H. B. Clark, Daniel E. Pomeroy, H. Rivington Pyne, and S. Sloan Colt of the Class of 1940 were elected to the Class of 1945. Mr. Michael Lerner was elected to the Class of 1945, to take the place of Mr. George T. Bowdoin, resigned.

Mr. H. B. Clark was appointed to the Executive Committee, Mr. Suydam Cutting to the Pension Board, to fill the vacancies on these two committees caused by the resignation of Mr. Bowdoin.

On June 5 President Davison was granted indefinite leave of absence in order to take up his duties as Colonel in the Air Corps, U. S. Army. An Administrative Committee was created composed of these Trustees: Messrs. A. Perry Osborn, Malcolm P. Aldrich, Cleveland E. Dodge, E. Roland Harriman, and H. B. Clark. Their duties were defined as consultation with the First Vice-President in all matters of policy, and the rendering of assistance to him. On September 25 the Executive Committee added Mr. John D. Rockefeller, 3rd, to this Committee.

The Board of Trustees, in meeting November 10, elected Mr. Richard K. Mellon a Trustee in the Class of 1945, to fill the vacancy due to the resignation of Mr. J. P. Morgan in 1939.

On December 12, at a meeting of the Board, Brigadier General Frederick H. Osborn resigned from the Nominating Committee, and Mr. Malcolm P. Aldrich was appointed in his place.

THE ADMINISTRATIVE AND SCIENTIFIC STAFFS

The Board of Trustees at the meeting of January 13 approved the establishment of the Department of Micropalaeontology as an independent department, separate from the Department of Palaeontology, with Dr. Brooks F. Ellis Associate in Micropalaeontology (in charge). On September 25, the Executive Committee approved Dr. Ellis as Curator of Micropalaeontology, and Miss Angelina Messina as Associate Curator. The following changes in the staff were approved on January 13: Robert R. Coles, Assistant Curator of Astronomy and the Hayden Planetarium; Mont A. Cazier, Assistant Curator of Coleoptera, Department of Entomology; Charles K. Nichols, Research Associate in the Department of Ornithology; Donald R. Barton, Associate Editor, and Ruth Gannett, Assistant Editor, of *Natural History*. Mr. Sherman P. Voorhees resigned as Advertising Manager, and Mr. G. M. Lewander was appointed independent advertising representative of *Natural History*.

A resolution of regret was passed by the Executive Committee at its special meeting on February 13 on the death on January 24 of Mr. Charles W. Leng, Research Associate in Coleoptera.

At the regular meeting of the Executive Committee, February 27, Miss Jannette May Lucas, Assistant Librarian—Osborn Library, was

retired on pension as of March 31. At this same meeting Mr. Charles J. O'Connor was appointed Circulation Manager of *The Junior Natural History Magazine*.

Mr. Herbert P. Whitlock retired as Curator of the Department of Geology and Mineralogy, as of July 1, and the Executive Committee on June 5 appointed him Curator Emeritus and Research Associate in Jade in that Department, these appointments to be effective the same day as his retirement from the Curatorship. Dr. Frederick H. Pough was appointed Acting Curator of the Department, beginning July 1.

On September 25 the Executive Committee adopted resolutions of sorrow on the death on July 11 of Mr. Philip B. Philipp, Research Associate in Oology, and on the death of Dr. Walter Granger, Curator of Fossil Mammals, in Lusk, Wyoming, on September 6.

Staff changes approved at this meeting were: the appointment, as of September 25, of Mr. E. Thomas Gilliard as Assistant Curator in the Department of Ornithology; the discontinuance of Mr. James Stokley as Associate Lecturer in Astronomy and the Hayden Planetarium, also effective on September 25; the acceptance of the resignation of Dr. Clyde Fisher as Curator-in-Chief of Astronomy and the Hayden Planetarium, effective as of August 1, and the appointment of Dr. Fisher as Honorary Curator in the same Department, to take effect October 1; the acceptance of the resignation of Dr. George C. Vaillant as Associate Curator of Mexican Archaeology, and the appointment of Dr. Vaillant as Honorary Curator of Mexican Archaeology, in the Department of Anthropology, to take effect October 1.

At the autumn meeting of the Board of Trustees November 10, the following changes in the staff were voted: the discontinuance of Mr. Raymond M. Gilmore as Research Associate in the Department of Mammalogy, effective November 10; the acceptance of the resignation of Dr. Roy Chapman Andrews as Director, effective December 31; the appointment, to take effect on November 10, of Mr. Wayne M. Faunce as Acting Director pending the appointment of a successor to Dr. Andrews in the Directorship.

ADMINISTRATION OF THE YEAR 1941

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Entomology

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**Member of the Scientific Staff.

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PRESIDENCY OF JOHN DAVID WOLFE, 1869-1872.

1869 Museum incorporated. Constitution adopted as drafted by Joseph H. Choate.

1870 First home secured, the Arsenal, Central Park.

1871 The City of New York appropriated \$700,000 for building. (Section I.)

PRESIDENCY OF ROBERT L. STUART, 1872-1881.

1874 Cornerstone of first section of building laid by President Ulysses S. Grant.

1878 Contract adopted between Trustees and Department of Parks, as drawn up by Andrew H. Green and Joseph H. Choate.

1880 Educational work with the schools inaugurated by Professor Albert S. Bickmore.

PRESIDENCY OF MORRIS K. JESUP, 1881-1908.

1892 Museum opened to the public on Sundays.

1887—1905 The City of New York appropriated \$4,218,820.94 for eight new building sections, II-VIII, and XV.

1907 Museum opened free to the public every day in the year.

1908—1917 Mr. and Mrs. Jesup bequeathed \$6,000,000 to the Museum.

PRESIDENCY OF HENRY FAIRFIELD OSBORN, 1908-1933.

1908 Constitution amended making the Mayor, the Comptroller and the President of the Department of Parks, *ex-officio* members of the Board of Trustees.

1921 Greater New York Charter amended, placing the Museum on the same basis as Public Schools with respect to Corporate Stock Appropriations, by Chapter 618 of the Laws of 1921, State of New York.

1921—1925 The City of New York appropriated \$2,233,800 for new sections, IX-XI, and equipment and alterations of old sections.

1924 The State of New York provided for the Theodore Roosevelt Memorial (Educational). Cost \$3,500,000. (Original Chapter 615 Laws of 1924.) (Building Section XII.)

1929 Appropriation of \$3,550,000 by the City of New York for construction of African Wing, Power Plant and Service Building, and Whitney Wing. (Sections XIII, XVII and XIX.)

Contribution of \$750,000 by Harry Payne Whitney for one-half cost of Whitney Wing. (Section XIX.)

1932 Completion of the African Wing. (Section XIII.)

1933 Completion of the Whitney Wing. (Section XIX.)

PRESIDENCY OF F. TRUBEE DAVISON, 1933—

- 1934 Contribution of \$150,000 by Charles Hayden for purchase of Zeiss Projection Planetarium and Copernican Planetarium.
 The American Museum of Natural History Planetarium Authority erecting Planetarium Building with funds (\$650,000) secured through loan from the Reconstruction Finance Corporation. (Section XVIII.)
- 1935 Opening of the Hayden Planetarium. (Section XVIII.)
- 1936 Dedication of the Theodore Roosevelt Memorial. (Section XII.)

CAPITAL FUND

The Capital Fund was established in 1884. It now amounts to \$14,416,478.29 (book value). The Trustees especially desire to insure the permanent growth and welfare of the Museum through an increase of the General Endowment Fund. The additional sum of \$10,000,000 is needed at present.

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