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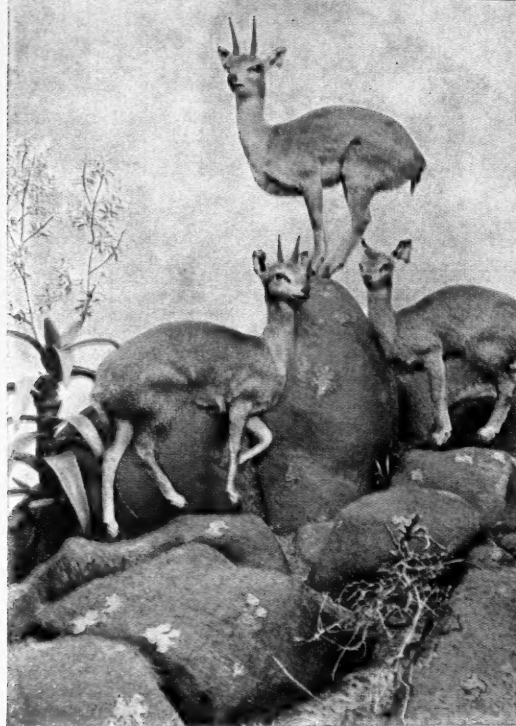
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Annual Report 1965
Field Museum of Natural History

On March 1, 1966, The Museum resumed its former name of Field Museum of Natural History. We have used our "new" and more familiar name in this 1965 Annual Report.



MARSHALL FIELD IV
1916-1965

**Annual
Report
1965**

Field Museum of Natural History





WHAT IS A MUSEUM? If ten individuals were asked,—either museum professionals or laymen—undoubtedly ten quite varying replies would be received. This is not surprising, nor is it necessarily a matter for concern, for a great American museum today is many things to many people. In this respect it is almost unique among our educational and cultural institutions. If ten respondents were to sit in discussion of their respective definitions, one clear and inescapable conclusion would emerge—that a museum has, probably in as great a degree as any other secular institution, the power to alter individual lives. It is tempting, in a large metropolitan museum with millions of visitors, to think in terms of thousands instead of individual persons, but in viewing the forest and missing the trees we lose sight of the deeply individual impact of a museum.

A graphic example of this Museum's effect in children's formative years came to attention recently, when the chairman of the department of biology at one of our great universities said to me, "You know, my first interest in biology was stimulated by the small cases* you circulated years ago to the schools. I have always had a great affection for the Field Museum as a consequence." Last summer a student working with the aid of a General Biological Supply House "Turtox Scholarship" wrote, "My months with the Museum will

* N. W. Harris Public School Extension exhibits

always represent to me one of the most profitable periods of my life, and I feel that such an experience could not fail to benefit the lives of many others, if they were given the opportunity."

In November a young Navy medical scientist wrote from Viet Nam, "Might I take this opportunity to thank the management and staff of Chicago Natural History Museum for the opportunities and experiences I gained as an employee and volunteer in the summers of '57, '59 and '63. I'll always hold Chicago as the beginning of my zoological career." A mother wrote in July, "Knowing we have our Museum helps ease the burden of teaching our deaf son about the world around him which eludes him sometimes. Teaching him the various species of animals, explaining the *hows* of a volcano, the *why* of a meteorite, the *when* of a dinosaur has been so much easier to show him as well as our hearing sons and daughter."

The continual participation of people in various departmental programs emerges throughout the following pages. Graduate students on expedition or engaged in research projects in collaboration with our scientific staff; scientists—from more than 30 countries and most of the United States, in 1965; high ability high school students attending the Holiday Science Lectures; school groups participating in such Raymond Foundation workshops as "Animals Without Backbones;" teachers attending a summer institute in geology at the Museum—all are integral to answering, "What is a Museum?"

These and our other visitors combined to increase attendance to 1,565,189—continuing a seven-year upward trend. Almost the entire 3½% increase over 1964 can be attributed to increased school attendance.

INSTITUTIONAL DEVELOPMENT

As stated in the last several Annual Reports, the Museum enjoys almost unparalleled opportunities to broaden and strengthen its program in exhibition, education, research. The principal requirement, plainly stated, is radically increased annual income for both operating and capital expenses. Adequate income is not likely to be derived from any single source; it is thus essential that logical areas of responsibility be delineated. Our four major categories of operating expense are (1) operation of the building as a public exhibition museum; (2) exhibit revision; (3) scientific program; (4) educational program. For many years, a major portion of the cost of the first category has been covered by tax support through the Chicago Park District. The Commissioners of the Park District have been most helpful and sensitive to the needs of the Chicago museums. In late 1965 a very

necessary increase in the levy was voted, funds from which increase will become available in 1967. Exhibit revision and our scientific and educational programs have traditionally been funded primarily from endowment income. It is quite clear, however, that the scientific activities of the Museum have grown to such a point that they transcend any logical level of local support. Increased federal support of our scientific program through grants from the National Science Foundation during the last ten years has been of inestimable value in preserving our research output. Even more recently, support from the Office of Naval Research, the National Institutes of Health, and the Office of the Surgeon General, United States Army, have broadened the federal contribution. This conforms to the pattern that has similarly emerged in the universities and independent research institutions of the country during a comparable period.

In summary, a dynamic and balanced program can be achieved by the Museum through continuation of Park District support, augmented local support from diverse segments of the community, and radically increased federal support of our nationally significant scientific program.

Good progress was made during 1965 in enlarging our non-governmental base of support. Outstanding among the gifts received were those of Mr. John M. Simpson, the Searle Foundation, Henry P. Isham, William H. Mitchell, Joseph N. Field, Marshall Field & Company, International Harvester Foundation, Wenner-Gren Foundation, Mr. and Mrs. William S. Street, and The Chicago Community Trust (Ruth Jones Allison Fund and John G. and Frances Searle Fund). A bequest of \$1,000,000 from the late Stanley Field was the capstone of nearly sixty years of devoted service to the Museum and the natural sciences. A full list of those who contributed other than membership funds during the year is carried later in the report. Grateful appreciation is expressed to all who helped to build a better museum through their generous gifts to the funds and to the collections.

A severe loss was suffered in September through the death of Marshall Field. As a Trustee he maintained close touch with the Museum. His untimely death deprived Chicago and the Museum of many years of leadership. Two Trustees were elected at the December meeting of the Board, Mr. Harry O. Bercher, President of International Harvester Corporation, and Mr. Remick McDowell, Chairman of the Board of the Peoples Gas Light and Coke Company.

Two organizational changes during the year were important steps toward our goals for the future. The first was the consolidation of all financial operations of the Museum under the administrative juris-

diction of Mr. Norman W. Nelson, Business Manager, who was appointed on February 1. The second was the establishment of a Department of Planning and Development to coordinate various phases of institutional development, including public relations, membership, and all other activities which communicate the Museum's program to the public. The appointment of Mr. Robert E. Coburn as Development Officer to head this department was announced in November to take effect January 1, 1966. Both the staff additions and the centralized administrative responsibilities thus created will greatly strengthen the Museum in the years ahead.

As planning in all aspects of our work progresses, one common concern is the Museum building, now almost 50 years old. Modernization of exhibits, restaurants, and educational service, and research areas all depend on allocation of space and correction of certain basic factors of obsolescence and deterioration. Since many of the problems confronting us were highly technical in nature, a firm of consulting engineers, John F. Dolio & Associates, was engaged to aid in preparing a comprehensive building survey. Preliminary work had been completed at year end.

School Programs

Any review of a major metropolitan area education program, whether within the formal school structure or extracurricular, must take as its point of departure the juxtaposition of appalling needs and limited resources. A typical example is the increase of 60% in organized group visitation to the Museum during the last two years. This very welcome increase in usage leaves us in an inescapable quandary. Our facilities and staff are clearly inadequate to handle such increased attendance, yet our responsibilities to the community are equally clear. The needed improvements in the building mentioned earlier impinge directly on this problem. Also needed are new approaches to our educational services which can only be developed in close correlation with the schools. Minimal collaborative steps have been begun, but we hope for more consistent and positive action.

To gain insight into ways in which the educational resources of the Museum can be most effectively utilized in meeting the problems of the culturally disadvantaged children of the Chicago area, Mr. Ernest Roscoe, of The Raymond Foundation, was assigned as a research associate, Urban Child Center of the University of Chicago, under the general direction of Dr. R. D. Hess. The five-month study was extremely helpful in focusing attention on problem areas to which

we should be directing thought and action. There is much to be done. Another new program was a six-day summer course in earth science presented to elementary school teachers during July. This pilot course was well received, with the result that a six-week course has been planned for the summer of 1966. Financial support has been granted for the expanded program by National Science Foundation.

The fourth annual Holiday Science Lectures, presented in collaboration with the AAAS, with financial support from the NSF, offered a particularly distinguished speaker, Dr. Polykarp Kusch, Professor of Physics at Columbia University and 1955 Nobel Prize winner for physics. Dr. Kusch's series of four lectures entitled "The Magnetic Dipole Moment of the Electron," was given to several hundred high-ability high school students from the metropolitan area.

Aside from these selected examples, the traditional internal and extension educational programs continued at an accelerated pace.

Special Exhibits and Programs

Two musical events were among the outstanding programs presented at the Museum during the year. The Indiana University School of Music initiated a concert series in James Simpson Theatre which met with immediate popular and critical acclaim. Two concerts by the Park District's Children's Orchestra were also held at the Museum.

Other programs specifically designed for children were the Chicago Area Science Fair and Chicago Latin Day, both held in May. The two events demonstrated the achievements of Chicago high school students in scientific projects and classical languages.

A number of shows were held through the year. In February, the Museum and the Chicago Nature Camera Club held the annual Chicago International Exhibition on Nature Photography. The May exhibit of children's art from the Junior School of the Art Institute, the June Chicago Shell Club and the Amateur Handcrafted Gem and Jewelry exhibits delighted Museum visitors. In November, the Illinois Orchid Society presented its annual orchid show, filling the Museum's Hall 9 with hundreds of the colorful tropical blossoms. As it has for many years, the Museum continued its support of the many naturalist groups in the Chicago area, such as the Audubon society, the Chicago Shell Club, the Kennicott Club and others.

THE SCIENTIFIC DEPARTMENTS

Anthropology

The Scientific Departments of a large museum must operate on a number of levels and in many directions in a successful year. Collecting, field study, laboratory research, writing, educating, care and preservation of collections, exhibit planning and development of the Departmental resources are all essential activities. The work of the Department of Anthropology in 1965 is a fine illustration of this.

Chief Curator Donald Collier played an active role on the Committee on Anthropological Research in Museums of the American Anthropological Association. A predoctoral fellowship program to increase the quantity and quality of ethnological research in museum collections throughout the United States was worked out with the Wenner-Gren Foundation for Anthropological Research, which is generously subsidizing the program for a five-year period.

In another educational program, designed to develop students of Anthropology on an undergraduate level, Chief Curator Emeritus Paul S. Martin trained eight students in the theory and practice of archaeology at the Museum's Field Station, Vernon, Arizona, as part of his summer research program. A pre-pottery site was investigated

High-wheeled chariot and riders, rubbing of tomb relief



Southwest China, Latter Han Period, 2nd century A.D.

and the present evidence indicates it was occupied around 500 B.C. The training program, supported by the Undergraduate Participation Program of the National Science Foundation, acquainted the students not only with the technical side of a dig—laying out grids, digging test trenches, sorting and cleaning artifacts, etc.—but with the rigors, stresses and joys of camp life on a dig in difficult country and climate. The summer program is the sort of introduction to field work which many archaeologists never experience until well into their graduate studies.

University courses rounded out the Department's educational effort. Dr. Collier, George I. Quimby, Curator, North American Ethnology and Archaeology until September, and later Research Associate in the same fields, Dr. Kenneth Starr, Curator, Asian Ethnology and Archaeology, taught courses in their fields at the University of Chicago.

Mr. Quimby made an aerial survey of parts of Lake Michigan and Lake Superior, in a plane piloted by Mr. and Mrs. Thomas Fifield of

Milwaukee, who graciously volunteered their help in Mr. Quimby's project. They were searching for underwater archaeological sites and for the hulk of La Salle's trading ship, the *Griffin*, the first sailing vessel on Lake Michigan, lost in a September storm in 1679. Later in the year, the Fifields and their son, C. Sprague Taylor, joined Mr. Quimby, James Getz, Field Associate of the Museum, Dr. James Fitting of the University of Michigan and others in investigating one such underwater site, an Indian village at Naomikong Point on the south shore of Lake Superior. They recovered pottery, hearths and stone tools to a distance of 100 feet from the beach. The village was of the Middle Woodland period, occupied about the time of Christ and subsequently submerged by the rising level of the lake.

In June, Dr. Fred Reinman, Assistant Curator, Oceanic Archaeology and Ethnology, left for Guam, in the Marianas, on a thirteen-month field trip. He was accompanied by his family, and later joined by Peter Newcomer, a graduate student at the University of Chicago, Reinman's field assistant. After a reconnaissance in which they found, mapped and studied more than 120 sites, they settled down to the excavation of selected sites on the coast and in the interior of the island. The work was supported by National Science Foundation.

The sorely needed revision of exhibits in Hall C on the Stone Age of the Old World and an inventory of Field Museum's extensive Old World prehistory collections occupied newly appointed Dr. Glen Cole, Assistant Curator of Prehistory. Another new staff member, Leon Siroto, Assistant Curator of African Ethnology, worked on a reorganization of the African collections, with the help of Mrs. Helen Strotz, a volunteer. Basing his studies on his field work among the BaKwele people of the Republic of the Congo (Brazzaville), Mr. Siroto is examining the use of masks in the political systems of traditional African societies.

The reorganization was only a part of the maintenance of our vast collections. Five years of preparation were climaxed in 1965 by the formal opening of the Robert R. McCormick Conservation Laboratory. As research continues and new equipment is added to the laboratory, methods of preservation and conservation are becoming increasingly sophisticated and useful. A specialized conservation project was carried on by Dr. Hoshien Tchen, Consultant on the East Asian Collection, with the advice of Mr. Harold Tribolet of R. R. Donnelley and Sons, Chicago, a nationally known authority on the conservation of paper. Dr. Tchen is concerned with the preservation of the Museum's outstanding collection of Chinese rubbings.



Botany

The research on the Department of Botany's two massive and historically important floristic studies moved ahead in 1965. Mrs. Dorothy Gibson, Custodian of the Herbarium, and Dr. Gabriel Edwin, Assistant Curator, Vascular Plants, worked on several families of the Flora of Peru, a monumental work giving all the known plants of Peru, which the Museum began publishing in 1936, and which now contains over 6,000 printed pages in *Fieldiana: Botany*. Chief Curator Louis Williams worked on the *Flora of Guatemala*, a project begun in the late 1940s, now numbering some 2,500 published pages.

The botanically little-known Big Horn Mountains of Wyoming were the site of a field trip by Dr. Ponce de Leon, Assistant Curator, Cryptogamic Herbarium and Mr. Robert Stolze, Herbarium Assistant, who collected both fungi and flowering plants and added greatly to the usefulness of the Museum collections from that area.

The major field work, as usual, took place in Central America, where an expedition, headed by Dr. Williams, collected in Guatemala, Honduras, Nicaragua and Costa Rica. Mrs. Williams, Mrs. Gibson, Sr. Antonio Molina, Field Associate, and Mr. Chester Laskowski, a graduate student at the University of Michigan who has worked with the Department of Botany for several years, were in the field for more than two months.

1965 was the fourth year of a projected five-year cooperative study undertaken with *Escuela Agrícola Panamericana*, in Tegucigalpa, Honduras. Sr. Molina, on the staff of the school, and an extremely capable and hardworking field botanist, is responsible for much of the success of the program to date.

Other programs in Central America involved cooperation with the University of California, Los Angeles and the National Museum of

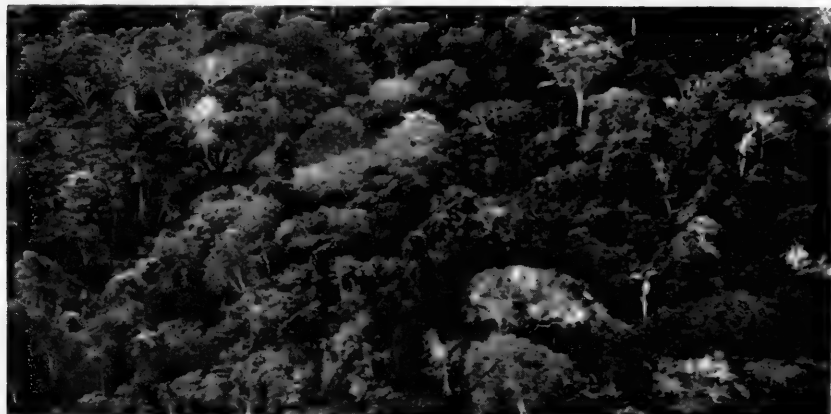
Costa Rica. Dr. Williams has been working with *Investigaciones de los Recursos Agrícolas y Forestales de la Costa Atlántica* (Nicaragua), a project of the United Nations; he has been identifying the plant material generated by the program.

The Museum joined in very interesting and important project initiated by the Forest Products Laboratory, United States Forest Service, to study the woods of Peru. The Museum determined the trees in the study from extensive collections, made from selected trees at different times in the year, and supervised the distribution of duplicate specimens. A related program with *Servicio Forestal y de Caza*, Lima, Peru, is a study of tropical forestry. The tropical forests of South America must be counted among the greatest and least used natural resources left to man and cooperative studies on the development, conservation, and proper utilization of these forests will prove important not only to the American republics but to the world in general.

Seventy-five accessions increased the Museum's Herbarium by some 42,000 specimens. Of these, nearly 28,000 came from the Central American collecting of the Department of Botany, and over 6,000 from collecting in the Big Horn Mountains of Wyoming. Many other specimens were gifts and exchanges.

In the Hall of Useful Plants (Hall 28), models of more than fifty kinds of fruit were exhibited. The fruits are shown in groups according to the basic structure of the flowers that produced them and illustrate the wide, and sometimes deceptive, variety of forms that result from selective development or suppression of one or more parts of the usual floral anatomy as the fruit matures.

Iparia National Forest, Amazonian Peru



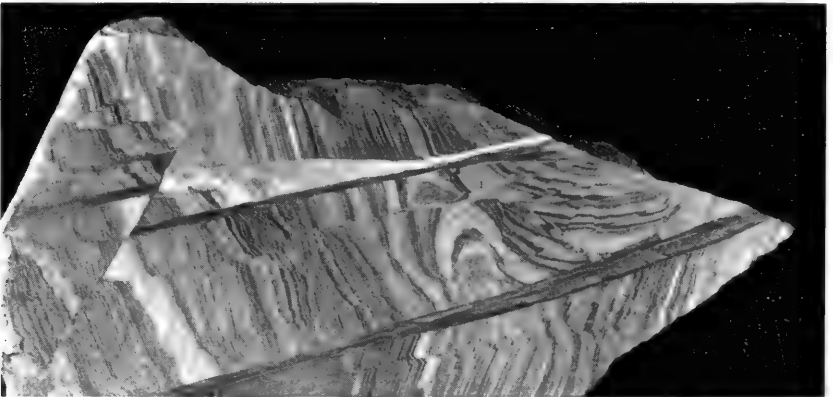
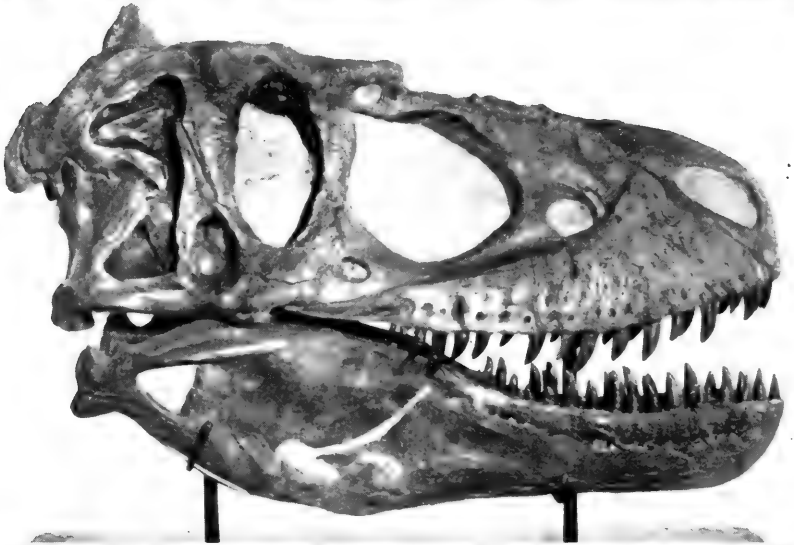
Geology

1965 was a year of consolidation and assimilation in the Department of Geology, after the addition of a large new storage area and the refurbishing of laboratories and offices. The collections have been transferred to their new location, along with the very large Walker collection from the University of Chicago, the cataloging of which will take many years of continuous effort.

Chief Cuator Rainer Zangerl completed a manuscript describing a small shark from the Mecca and Logan Quarry shales of west-central Indiana. The shark presents some interesting implications about the origin of bone in vertebrate animals. Translation and editorial work also occupied the Chief Curator's time. Among other works, he is translating the unpublished "Comparative Odontology" by the late Professor Bernhard Peyer of the University of Zurich. The book will be published by the University of Chicago Press.

Joining the staff at the end of June, Mr. Matthew Nitecki, Assistant Curator of Fossil Invertebrates, has been engaged in the study of various fossil sponges. The Curator of Fossil Invertebrates, Eugene Richardson, is studying the coal age fossils of the strip mines of northern Illinois. As in years past, the amateur collectors interested in this area have been an important aid to Richardson's scientific work. Richardson completed the scientific description of a small, worm-like fossil long known in the area as the "Tully Monster," because it was first found by an amateur collector, Mr. Francis Tully, of Lockport, Illinois. The official scientific name now also honors Mr. Tully, and the worm is known as *Tullimonstrum gregarium*.

Another amateur, in a quite different aspect of Geology, has been the source of a number of large new gem stones in the Hall of Gems.



Using rough material furnished by the Museum, Mr. Walter Kean of Riverside, Illinois, faceted six handsome stones with great skill. He has been working with the Curator of Mineralogy, Edward Olsen, whose research on several aspects of the chemistry of meteorites, conducted with Dr. Robert Mueller, Research Associate, has resulted in three papers on meteorites.

Bertram Woodland, Curator of Igneous and Metamorphic Petrology, continued to work on the microstructures of the metamorphic rocks of the Royalton area in Vermont and the Central Black Hills of South Dakota. With Mr. Doy Zachry, formerly of the University of Arkansas, Woodland, Richardson and Zangerl engaged in a cooperative project on the lithology of the Mississippian Fayetteville shale in Arkansas.

The Curator of Fossil Fishes, Robert H. Denison, produced a manuscript on a peculiar jawless fish, *Cardipeltis*, based on the first known articulated specimen from the Lower Devonian (about 400 million years ago) of Wyoming. In a continuing study of Ordovician vertebrates he collected and studied for several weeks in the Cañon City area of Colorado.

Seventeen years of study, mostly in the Big Badlands of South Dakota, on the geography and climate of that area during the Oligocene (38-26 million years ago) brought Dr. John Clark, Curator of Sedimentary Petrology, to the completion of a manuscript on the subject in 1965.

Associate Curator of Fossil Mammals, William D. Turnbull, has been engaged in two major studies. The first is a comparative anatomical and functional analysis of the main adaptive types of chewing apparatus in mammals; the other is a descriptive and analytic study of the Potassium-Argon dated Grange Burn Pliocene mammal fauna in Australia. This work continues the cooperative effort with Dr. Ernest Lundelius of the University of Texas, which began with the 1963-64 Australian Paleontological Expedition.

An elaborate and extremely sensitive security system was installed in the Hall of Gems in 1965, under the direction of Harry Changnon, Curator of Exhibits. The system gives 24-hour protection to the many valuable stones in the collection.

Top, *Mississippian crinoids, from Iowa*; middle, *skull of Gorgosaurus, from the Cretaceous, found in Alberta, Canada*; bottom, *section of calico sandstone*.



Female Argiope argentata with prey. Male spider is at lower right. Photo taken by Associate Curator Hymen Marx on a recent Field Trip to Barro Colorado Island, Canal Zone.

Zoology

The widespread and varied activities of the Department of Zoology, the largest scientific department in the Museum, are most easily reported Division by Division. In general, some 80,000 specimens were added to the Departmental collections; the majority of these, predictably, were insects and lower invertebrates. A new exhibit, "The Flow of Information," was prepared and opened under the supervision of Chief Curator Austin L. Rand. The exhibit gives a graphic presentation of the way scientific work develops from primary data to philosophic treatise and popular book.

DIVISION OF MAMMALS—The major event of the year was the W. S. and J. K. Street Expedition to Afghanistan. Preparations began in February, and the group, which included Expedition Fellows Jerry Hassinger and Hans Neuhauser, left for Afghanistan on June 23. They were joined in Kabul by Dr. Robert Lewis of the American University of Beirut and his graduate student Mr. Sana Atallah, who were appointed Medical Entomologist and Expedition Preparator, respectively. The Expedition was extraordinarily successful: over 2,000 mammals were taken, along with many thousands of lice, mites, ticks and fleas associated with the mammals. Reptiles,

snails and ecologically important plants were also collected. The final results of the Expedition, to be prepared by various experts, will be published in the Museum's *Fieldiana* series, and the information, particularly about the mammals and their ectoparasites, will be of great scientific and medical importance.

At the Museum, various research projects continued during the year. Curator Joseph Moore worked on the living genera of Beaked Whales and Research Curator Philip Hershkovitz, under a contract with the National Institutes of Health, accelerated his definitive study of marmosets. Mr. Hershkovitz, whose work with the Public Health Service concerning Bolivian hemorrhagic fever was mentioned in last year's Report, did some similar work for Dr. R. H. L. Disney of British Honduras, who is working on the epidemic disease *Leishmaniasis*, in which some rodents are implicated. Associate Jack Fooden completed a four-month study trip to the museums of Europe in connection with his revision of the genus *Macaca*, the monkeys which play the most vital role in biological research. Associate Charles Nadler, who is investigating the value of the number and morphology of chromosomes as a taxonomic tool in studying the relationships among species of North American ground squirrels, spent three weeks walking through the Brooks Range in Alaska, with pack dogs and Eskimo guides, gathering material for his studies.

DIVISION OF BIRDS—The 3,300 species and 8,200 races of birds currently recognized for Central and South America occupied Curator Emmet R. Blake, as he completed reference files and preliminary studies for his Manual of Neotropical Birds, supported by a National Science Foundation grant. Including descriptions, diagnoses, ranges, recent synonyms, etc., the Manual is a basic reference work planned as an aid to the taxonomist, zoogeographer and parasitologist working in the field or laboratory.

Associate Curator Melvin A. Traylor completed a critical study of a large collection of birds from Szechwan, China, acquired by the Museum in the early 1930s. The report, scheduled for publication in the *Fieldiana* series, is expected to be of wide interest since the collection, of some 1,800 birds, was one of the last of any consequence to reach the Western World from China. Mr. Traylor also aided Daniel Parelius, the 17-year-old son of an American missionary in the Ivory Coast of Africa. Parelius wrote to the Museum, offering to obtain specimens for the collections. Traylor replied with detailed instructions on the preparation and shipping of specimens. The resulting collection of birds contains numerous new records for the

Ivory Coast, and at least three new forms for the Museum's collections. This fruitful collaboration between scientist and amateur collector is being continued in a report of the birds of the Ivory Coast.

DIVISION OF AMPHIBIANS AND REPTILES—Curator Robert F. Inger and the late Professor Bernard Greenberg of Roosevelt University, a Research Associate of the Museum, were engaged in a study of the ecology and taxonomy of the reptiles and amphibians of Borneo. Much of their work centered around the competition between species of frogs and the reproductive patterns of rain forest lizards. They found that the year 'round breeding of these lizards apparently buffers population fluctuation and may be one of the factors contributing to the great diversity of faunas of the rain forest.

Associate Curator Hymen Marx and George B. Rabb, Associate Director of Brookfield Zoo and a Research Associate of the Museum, continued their study of the phylogeny of the poisonous viperine snakes. Some of the data were used to test a recently developed method of determining phylogenies with the aid of computers. Mr. Marx also completed a check-list of the reptiles and amphibians of Egypt, as part of the long-standing cooperative effort with the U. S. Naval Medical Research Unit, No. 3, Cairo, Egypt. Inger was elected Vice-President and Marx a Governor of the American Society of Ichthyologists and Herpetologists.

DIVISION OF FISHES—Loren P. Woods, Curator, spent November and December on Cruise 12 of the Southeastern Pacific Biological Oceanographic Program sponsored by the National Science Foundation. The object of the cruise, on the research vessel *Anton Bruun*, was to study distribution and collect samples of fish from shore depths to the bottom of the Peruvian Trench (6,000 meters). Extensive collections were made at San Felix Island and Juan Fernandez Islands, several hundred miles off the Chilean coast.

DIVISION OF INSECTS—The enlargement and reorganization of the facilities of the Division of Insects was the major event of the year. Under a National Science Foundation grant, floor space was increased by 25 per cent and storage space for the collections by 40 per cent. An expanded program of preparation and labeling of specimens was also undertaken, with the help of students, and summer employees under the direction of Associate Harry G. Nelson, Professor of Biology at Roosevelt University. For the first time in a number of years it was possible to prepare, process and distribute a great backlog of material for the collections. Associate Curator



Aninga aninga

Common name: variously, water turkey, darter, snake bird, aninga.

Painting by Karl Plath.

Henry Dybas completed a paper on ptiliid (featherwing) beetles, in which he presented the first evidence of parthenogenesis, i.e., reproduction from unfertilized eggs, in these beetles. Curator Rupert Wenzel continued to edit and write parts of the forthcoming book *Ectoparasites of Panama*, a collaborative project under the auspices of the Office of Research and Development, Office of the Surgeon General, U. S. Army.

DIVISION OF LOWER INVERTEBRATES—Curator Emeritus Fritz Haas completed a description of a new genus of land snails from Peru, and continued his invaluable work of processing accumulated materials into the molluscan collections. Curator Alan Solem spent the latter part of the year collecting in Western Samoa, Fiji and New Zealand. He was joined by Mr. Laurie Price, of New Zealand, who assisted him. Solem discovered that the endodontine land snails become extinct when the native vegetation is destroyed, but two other groups, the charopinine endodontids and the partulid land snails, have successfully adapted to secondary growth and overgrown plantation areas, and are thus in no immediate danger of extinction. Solem was awarded a National Science Foundation grant in support of his work on the classification and zoogeography of the endodontid land snails.

DIVISION OF VERTEBRATE ANATOMY—Dr. Karel F. Liem was appointed Assistant Curator of Vertebrate Anatomy. Dr. Liem also serves as Assistant Professor, Department of Anatomy, University of Illinois College of Medicine. His current research project is on the evolutionary morphology of the fish family *Cichlidae*.

* * *

The staff lost a distinguished colleague in February with the death of D. Dwight Davis. Mr. Davis joined Field Museum staff in 1930 and had served as Curator of Vertebrate Anatomy since 1941. His death, at the age of 56, cut short a career which had reached a height just two months before his death with the publication of a monumental work on the giant panda. Two other valued collaborators in our research program, Dr. Bernard Greenberg, Research Associate in Reptiles, and Dr. Charles H. Seevers, Research Associate in Insects, both of the faculty of Roosevelt University, died during 1965. Dr. Seevers' association with Field Museum extended over a period of 25 years and his contribution to the collections and research of the Division of Insects was immense.

Library

Much of the Library's work this year was connected with the utilization of the new space provided by the National Science Foundation construction grant. This involved the massive shift of many thousands of volumes into the new stack area and the geology library and the consequent enlargement and rearrangement of the Reading Room and cataloging and technical services areas. This has resulted in a much needed doubling of our work and study space.

These tasks were, of course, carried out in addition to the primary concern of the Library: service to the scientific staff of the museum and to visiting scientists and students. The Library's acquisition program resulted in the addition of approximately 10,000 items to our collections. The reference department reported a substantial increase in the number of visitors and in the number of periodicals and books used. Library visitors came from most of the continental United States and from Canada, Germany, Japan, India, New Zealand, Australia, and Yugoslavia.

The work of the catalog department was highlighted by the completion of the Subject Headings Authority Catalog, five years in the making. This involved, among other things, a complete revision of our main subject catalog in the Reading Room and the addition of over 8,000 cross-reference and new subject cards. This has greatly increased its usefulness and accuracy. The department classified



Audubon
Letters

approximately 2,300 titles (4,500 volumes), including 1,400 reclassified titles (3,100 volumes). 1,800 analytics were prepared for articles and monographs in serial publications. Over 20,000 cards were added to our main, departmental, and divisional catalogs.

Many valuable and important gifts were made to the Library by interested donors. Included among them were two very fine letters of John James Audubon, one the gift of Mr. Herbert R. Strauss and the other given anonymously. Gifts of this kind greatly enrich the value of our collections.

Public Information Services

The Public Information Services continued during the year to supplement our exhibits as one of the Museum's principal means of communicating technical and non-technical science information to the public. The Museum Press, the Book Shop, and Divisions of Photography, Motion Pictures, Illustration, and Public Relations combine to serve untold thousands of people in an impressive number of ways. Each of these divisions provides opportunities for the individual discussed at the beginning of this report to broaden his use of the Museum through reference to a source of information specifically oriented to his needs. A scholar seeking illustrative material for his forthcoming book; a teacher who wishes to go the extra step in preparation that means the difference between pedestrian and inspired teaching; the parent who is willing to bring his child to the Museum to seek collateral reading material or natural history specimens for a school assignment; the scientist in an overseas Public Health Service unit who finds in the latest scientific publication of the *Fieldiana* series a research report that relates directly to his current investigations; the local newspaper reporter who calls to check out some scientific information he wishes to use—these, too, help to answer "What is a museum?"

Building Operations

The completion of construction under a National Science Foundation grant of new facilities for the Department of Geology, the Library of the Museum, and the Division of Insects was a major event of the year. The redesigning and reconstruction of Halls 9 and 32 were begun in 1965. Hall 9 is to be used to house special exhibits and Hall 32 will contain a pioneering exhibit on Tibetan civilization.

CHICAGO NATURAL HISTORY MUSEUM

**Comparative Statement of Receipts
and Expenditures - Current Funds
Years 1965 and 1964**

OPERATING FUND

RECEIPTS	1965	1964
Endowment income—		
From investments in securities	\$ 835,501	\$ 778,586
From investments in real estate	112,000	112,000
	<u>\$ 947,501</u>	<u>\$ 890,586</u>
Chicago Park District—tax collections	\$ 358,663	\$ 361,267
Annual and sustaining memberships	45,431	35,086
Admissions	50,036	48,529
Unrestricted contributions and sundry receipts . .	276,429	128,555
Restricted funds transferred and expended through Operating Fund	817,797	448,511
	<u>\$2,495,857</u>	<u>\$1,912,534</u>
 EXPENDITURES		
Operating expenses—		
Departmental	\$ 783,377	\$ 749,876
General	693,171	625,539
Building repairs and alterations	176,266	165,652
	<u>\$1,652,814</u>	<u>\$1,541,067</u>
New geology and library facilities	\$ 509,012	\$ 242,377
Collections—purchases and expedition costs	127,447	80,854
Furniture, fixtures and equipment	26,133	27,180
Provision for heating plant renewal	22,486	22,486
Appropriations—		
Proposed pension program	50,000	
Building and exhibit modernization	110,000	
	<u>\$2,497,892</u>	<u>\$1,913,964</u>
DEFICIT FOR THE YEAR	<u>\$ 2,035</u>	<u>\$ 1,430</u>

*Certain reclassifications have been made in the amounts
for 1964 to conform to the 1965 presentation.*

CONTINUED ON NEXT PAGE

N. W. HARRIS PUBLIC SCHOOL EXTENSION

	1965	1964
Income from endowments	\$ 51,831	\$ 42,606
Expenditures	43,925	39,761
EXCESS OF INCOME OVER EXPENDITURES	<u>\$ 7,906</u>	<u>\$ 2,845</u>

OTHER RESTRICTED FUNDS

RECEIPTS

From Specific Endowment Fund investments . . .	\$ 106,540	\$ 100,331
Contributions and grants for specific purposes . . .	648,840	485,612
Operating Fund provision for heating plant renewal	22,486	22,486
Sundry receipts	70,169	63,115
Gain on sale of restricted fund securities	1,091	2,732
	<u>\$ 849,126</u>	<u>\$ 674,276</u>

EXPENDITURES

Expended through Operating Fund	\$ 817,797	\$ 448,511
Added to endowment fund principal	55,000	63,000
	<u>\$ 872,797</u>	<u>\$ 511,511</u>

EXCESS (DEFICIENCY) OF RECEIPTS OVER

EXPENDITURES	<u>\$ (23,671)</u>	<u>\$ 162,765</u>
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THE TRUSTEES, CHICAGO NATURAL HISTORY MUSEUM:

We have examined the accompanying comparative statement of receipts and expenditures—current funds of the Chicago Natural History Museum for the year ended December 31, 1965. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the statement mentioned above presents fairly the receipts and expenditures of the current funds of the Chicago Natural History Museum for the year ended December 31, 1965, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

ARTHUR YOUNG & COMPANY

January 17, 1966

Use During 1965 of Income from Special Purpose Endowment Funds

EDWARD E. AYER LECTURE FOUNDATION FUND	
Cost of Museum Lecture Series	\$ 5,026.00
Subsidy to Publication Program.....	2,076.88
FREDERICK AND ABBY KETTELLE BABCOCK FUND	
Subsidy to Publication Program.....	2,681.45
EMILY CRANE CHADBOURNE ZOOLOGICAL FUND	
Field Trips.....	605.33
MRS. JOAN A. CHALMERS BEQUEST FUND	
Purchase of specimens.....	972.23
Laboratory equipment and supplies.....	4,651.96
CONOVER GAME-BIRD FUND	
Purchase of specimens.....	1,456.69
Expeditions and study trips.....	1,250.00
THOMAS J. DEE FELLOWSHIP FUND	
Fellowship grant.....	725.00
GROUP INSURANCE FUND*	
Group insurance cost.....	8,298.12
Subsidy to Pension Fund.....	10,000.00
N. W. HARRIS PUBLIC SCHOOL EXTENSION FUND	
Preparation, care, and distribution of exhibits to Chicago schools.....	42,925.49
LIBRARY FUND†	
Purchase of books and periodicals.....	3,811.09
JAMES NELSON AND ANNA LOUISE RAYMOND PUBLIC SCHOOL AND CHILDREN'S LECTURE FUND	
Subsidy to public school and children's lecture programs.....	44,237.35
MAURICE L. RICHARDSON PALEONTOLOGICAL FUND	
Expeditions, field work, and professional meetings.....	1,153.60
KARL P. SCHMIDT FUND	
Study grant.....	126.00

These funds have been used in accordance with the stipulations under which they were accepted by the Museum. In addition, the income from more than \$17,000,000 of unrestricted endowment funds was used in general Museum operation.

* Established by Stanley Field

† Established by Edward E. Ayer, Huntington W. Jackson, Arthur B. Jones, Julius and Augusta N. Rosenwald

Contributions and Bequests

The gifts of many individuals have built a great museum. Contributions and bequests now and in the future will permit needed improvement of exhibits, expansion of the educational program, and increased support of scientific research. The following form is suggested to those who wish to provide for Field Museum of Natural History in their wills:

Form of Bequest

I do hereby give and bequeath to Field Museum of Natural History of the City of Chicago, State of Illinois:

Cash contributions to Field Museum of Natural History are allowable as deductions in computing net income for federal income tax purposes.

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Museum Publications: Fieldiana

DEPARTMENT OF BOTANY

CORRELL, DONOVAN S.

Supplement to Orchids of Guatemala and British Honduras. Fieldiana: Botany, vol. 31, no. 7, 46 pp., 2 illus.

GLASSMAN, S. F.

Preliminary Studies in the Palm Genus Syagrus Mart. and Its Allies. Fieldiana: Botany, vol. 31, no. 5, 20 pp., 7 illus.

SMITH, C. EARLE, JR.

Agriculture, Tehuacan Valley. Fieldiana: Botany, vol. 31, no. 3, 46 pp., 16 illus.

Flora, Tehuacan Valley. Fieldiana: Botany, vol. 31, no. 4, 20 pp., 18 illus.

WILLIAMS, LOUIS O.

Tropical American Plants, VII. Fieldiana: Botany, vol. 31, no. 6, 8 pp., 1 illus.

DEPARTMENT OF GEOLOGY

HORBACK, HENRY, and EDWARD J. OLSEN

Catalog of the Collection of Meteorites in Chicago Natural History Museum. Fieldiana: Geology, vol. 15, no. 3, 145 pp.

NITECKI, MATTHEW H.

Catalogue of Type Specimens in Chicago Natural History Museum, Porifera. Fieldiana: Geology, vol. 13, no. 6, 35 pp.

REED, CHARLES A., and WILLIAM D. TURNBULL

The Mammalian Genera Arctoryctes and Cryptoryctes from the Oligocene and Miocene of North America. Fieldiana: Geology, vol. 15, no. 2, 72 pp., 21 illus.

SIMMONS, DAVID JAY

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DEPARTMENT OF ZOOLOGY

CALDWELL, DAVID K.

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Relationships and Zoogeography of the Viperine Snakes (Family Viperidae). Fieldiana: Zoology, vol. 44, no. 21, 46 pp., 18 illus.

MOORE, JOSEPH CURTIS, and GEORGE H. H. TATE

A Study of the Diurnal Squirrels, Sciurinae, of the Indian and Indochinese Subregions. Fieldiana: Zoology, vol. 48, 351 pp., 33 illus.

PARKES, KENNETH C., and EMMET R. BLAKE

Taxonomy and Nomenclature of the Bronzed Cowbird. Fieldiana: Zoology, vol. 44, no. 22, 10 pp.

SEEVERS, CHARLES H.

The Systematics, Evolution and Zoogeography of Staphylinid Beetles Associated with Army Ants (Coleoptera, Staphylinidae). Fieldiana: Zoology, vol. 47, no. 2, 213 pp., 23 illus.

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Lucky Accidents, no. 5, pp. 6-8, 3 illus.
- COLLIER, DONALD
New Conservation Laboratory Opened, no. 9, pp. 2-3, 4 illus.
- HOWELL, META
The Museum Library in Transition, no. 5, pp. 2-3, 7, 2 illus.
- INGER, ROBERT
Cold Blood, Warm Climate, no. 11, pp. 2-3, 3 illus.
- NELSON, PAULA
Australian Expedition Discovers Land mark Fossil Site, no. 4, pp. 4-5, 8 illus.
- OLSEN, EDWARD J.
Our Geologic Age, no. 7, pp. 3-5, 8, 2 illus.
- QUIMBY, GEORGE I.
Plains Art from a Florida Prison, no. 10, pp. 2-5, 7 illus., and cover picture.
Exploring an Underwater Indian Site, no. 8, pp. 2-4, 5 illus. and cover picture.
Underwater Archeology in Lake Michigan, no. 6, pp. 2-3, 8, 1 illus.
- RAND, AUSTIN L.
The Flow of Information, Zoology's Newest Exhibit, no. 12, pp. 4-5, 1 illus.
- The Turkey Vulture's Sense of Smell*, no. 3, p. 8, 1 illus.
- REINMAN, FRED M.
Fishing in Oceania, no. 3, pp. 3-5, 6 illus.
- RICHARDSON, EUGENE S., JR.
Our Sudden Spate of New Fossils, no. 1, pp. 6-8, 2 illus.
- TRAYLOR, MELVIN A., JR.
The Flemings of Kathmandu, no. 7, pp. 6-7, 1 illus.
- WILLIAMS, LOUIS O.
Plants Without Names, no. 2, p. 7, 1 illus.
Thorn Apples Are Not for Eating, no. 8, p. 5, 2 illus.
- WOOD, MIRIAM
Members' Children Explore the World of Nature, no. 1, pp. 2-3, 8 illus.
- WOODLAND, BERTRAM G.
Mountain Building I, no. 11, pp. 5-8, 7 illus.
- ZANGERL, RAINER
D. Dwight Davis, 1908-1965, no. 3, pp. 6-7, 1 illus.
The New Anatomy of the Geology Department, no. 2, pp. 4-6, 3 illus.

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DEPARTMENT OF ANTHROPOLOGY

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Italian edition of *Birds in Summer* (first published in 1962, Encyclopedia Britannica Press), 31 pp.

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