

reds, blues, and blacks, is bewildering. It is this group of birds, with thick bills, the seed eaters of Africa, that replaces the sparrows of America. There are only two species of sparrows in the collection as compared with forty-seven found around Chicago.

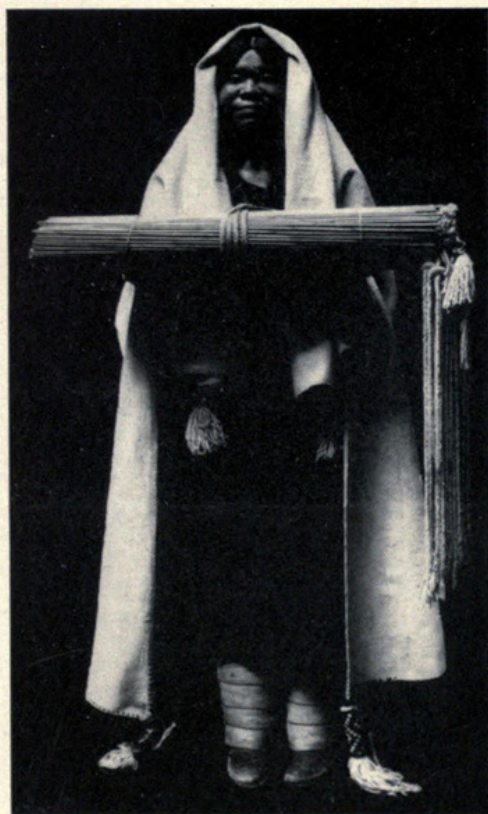
This representative collection, coming as it does from a comparatively well-known area in West Africa, will serve as an essential basis of comparison for the study of other African material in our collection.

AUSTIN L. RAND  
Curator of Birds

## FIFTY YEARS AGO AT THE MUSEUM

Compiled by MARGARET J. BAUER

Among the acquisitions of more than ordinary interest received by the Field Columbian Museum during 1899 were 1,600 specimens of pottery, stones, ceremonial objects, clothing, etc., illustrating the past and present of the Hopi Indians. This



HOPÍ BRIDE

Part of the Stanley McCormick Hopi Indian Collection. The model was cast from life and sculptured by F. B. Melville. It is now exhibited in Hall 7.

generous gift of Mr. Stanley McCormick added to the growing collection of Hopi Indian material collected by Mr. George A. Dorsey, Curator of Anthropology, and purchases from Rev. H. R. Voth. Many

of these ceremonial objects and fetishes are now unobtainable. A large portion of the McCormick collection was immediately installed.

\* \* \*

The American Indian material acquired by the active field program of the Museum in its early years is in general quite irreplaceable. This, of course, is the case with the material culture of all native peoples who have come into contact with civilization in recent decades.

## SUMMER LECTURE TOURS GIVEN TWICE A DAY

During July and August, conducted tours of the exhibits, under the guidance of staff lecturers, will be given on a special schedule, as follows:

**Mondays:** 11 A.M., Story of Plants—Basis of All Life (general survey of the plant exhibits); 2 P.M., General Tour (exhibition halls, all departments).

**Tuesdays:** 11 A.M., Places and Peoples (general survey of the anthropology exhibits); 2 P.M., General Tour.

**Wednesdays:** 11 A.M., Records from the Rocks (general survey of the geology exhibits); 2 P.M., General Tour.

**Thursdays:** 11 A.M. and 2 P.M., General Tours.

**Fridays:** 11 A.M., The World of Animals (general survey of the animal exhibits); 2 P.M., General Tour.

There are no tours given on Saturdays and Sundays, or on Monday, July 4.

## Plastic Techniques Illustrated

A special exhibit on "Plastics and Other Media in Museum Exhibits," prepared by Mr. Emil Sella, Curator of Exhibits in the Department of Botany, is now on view in Stanley Field Hall. The material was used in May in a demonstration for the annual meeting of the American Association of Museums.

## Technical Publications Issued

The following technical publications were issued by Chicago Natural History Museum during the last month:

Fieldiana: Geology, Vol. 10, No. 7. *A New Silurian Trilobite, Dalmanites Oklahomae*. By Eugene S. Richardson, Jr. June 6, 1949. 3 pages, 2 text figures.

Fieldiana: Zoology, Vol. 31, No. 29. *Notes on Growth and Reproduction of the Slimy Salamander, Plethodon Glutinosus*. By Clifford H. Pope and Sarah H. Pope. June 6, 1941. 12 pages, 6 text figures.

## BOTANY RESEARCH WIDENED BY SOUTHWEST EXPEDITION

BY HUGH C. CUTLER  
CURATOR OF ECONOMIC BOTANY

No question is more familiar to the staff of the Department of Botany than "What is the name of this plant?" The botanists of the Museum spend the greater part of their time in studying and naming the thousands of plant collections brought back by expeditions of the Museum and of other institutions. As a result, our study collections and publications on the floras of the Latin-American countries are outstanding.

By comparison, the research of the Museum's Southwestern Botanical Expedition of 1949, sponsored by Mr. Joseph Desloge, of St. Louis, was planned to secure information and materials on how certain species of plants differ from each other and how these different plants might have originated. These studies were conducted principally on the joint-firs or Mormon tea plants of the Ephedra family. Chinese species of Ephedra were for many years the only source of ephedrine, a drug used in treating nasal and sinus infections until a few years ago when synthetic ephedrine and later benzedrine were manufactured for the same purpose.

The Ephedras are of especial interest to botanists because they occupy a position midway between the Gymnosperms or cone-bearing plants and the Angiosperms or plants with enclosed seeds. The wood of Ephedra, too, is intermediate between the softwoods and the hardwoods. One of them, *Ephedra trifurca*, is shown in Case 821 of Martin A. and Carrie Ryerson Hall (Plant Life—Hall 29) in connection with models of related plants.

## CHROMOSOME STUDY

In addition to the botanical interest in Ephedra as a possible connecting link in the plant kingdom, there was a practical reason for choosing to study this group:

Within the cell, which is the basic unit of a plant, are the chromosomes, linear structures that can be deeply colored by some common biological stains like carmine. The number of chromosomes in a cell is usually constant throughout a plant. By studying the changes and actions of the chromosomes at certain stages of development we can tell much about the past history and evolution of the plant. As many chromosomes are small and difficult to see even under powerful magnification, the most intensive research has been done on plants and animals that have a low number of large and easily observable chromosomes. It is partly for this reason that we know more about the mechanics of inheritance in the fruit fly (with four pairs of chromosomes) and in corn (with ten pairs of chromosomes) than we do in man (with twenty-four pairs of chromosomes).

(Continued on page 8, column 1)



## STAFF NOTES

Dr. Robert H. Denison, Curator of Fossil Fishes, has gone to the Southwest for a three-month reconnaissance to advance his studies and collections of fishes of the Devonian period. He is working on Rocky Mountain sites in Arizona, Wyoming, Colorado, and Utah.... Mr. Clifford H. Pope, Curator of Amphibians and Reptiles, will spend the summer in continuance of his work on the salamanders of North Carolina and Virginia, working from headquarters made available by the Mountain Lake Biological Station in Virginia.... Colonel Clifford C. Gregg, Director of the Museum, was the commencement speaker in June for Morgan Park Military Academy.... Dr. L. H. Tiffany, professor of botany at Northwestern University and Research Associate in Cryptogamic Botany at this Museum, was awarded the honorary degree of Doctor of Pedagogy by Eastern Illinois State College at Charleston.... Chief Curator of Zoology Karl P. Schmidt made a transcription at the WMAQ studios on "The Nature of a Natural History Museum" for the radio station in Norfolk, Va.... Mr. Henry S. Dybas, Assistant Curator of Insects, spoke before the ecology group at the University of Chicago on the insect fauna of the Pacific islands. Mr. Schmidt spoke on his recent experiences in New Zealand.... Dr. Theodor Just, Chief Curator of Botany, recently conducted a botanical seminar for the faculty and students at the University of Michigan, Ann Arbor. His subject was "Some Aspects of Plant Morphology and Evolution."

## BOTANICAL EXPEDITION—

(Continued from page 7)

There are only seven pairs of medium-sized chromosomes in most species of *Ephedra* and, since these can be readily stained with the simplest of laboratory methods, *Ephedra* was chosen for study.

Most of the field work was done in north-eastern Arizona and in adjacent Utah. This is part of the Navaho Indian Reservation where the only inhabitants are seminomadic Indians and a few white traders, missionaries, and teachers.

## ROADSIDE LAB WORK

As soon as an area of *Ephedra* in the correct stage for study was found, the microscope and stains were set up on the tail gate of the station wagon. A series of plants was collected and several flowers from each plant were examined. This was done by pressing out the developing cells onto a small drop of stain on a glass slide. If the stages with active cells and with chromosomes in the proper condition for study were found, a large number of flowers from the same plant were cut open and

preserved in a mixture of acid and alcohol. These flowers will be examined more critically at the Museum with a better microscope than the one carried in the field. Occasionally a study slide showed the chromosomes so clearly or in so rare a stage that it was preserved. This was done by washing the slide carefully with a series of solutions until all moisture was removed and the chromosomes were in a nearly pure solution of balsam solvent. Then Canada balsam was added and the slide covered with a thin cover glass. Because the chromosomes are so small, it is essential that no dust and dirt be present on the slide.

The most interesting part of the study was made on a series of hybrids between common species of *Ephedra*. Normally the species are distinct, but occasionally they will cross and form a series of intermediates. In several places it was possible to gather material of each parent and of the intermediates and to study the behavior of the chromosomes as well as the gross structure of the plants.

While we were making slides of some of these hybrids, two Navaho boys rode into the expedition camp and, after sitting quietly and watching for about fifteen minutes, one of them asked if he could "listen to the stones." They had seen prospectors traveling about the reservation testing deposits of radioactive ores and assumed the microscope was a Geiger counter.

About 40,000 individual plant colonies were examined and more than 300 of these were studied under the microscope. All of the *Ephedra* species of northern Arizona were investigated, and from the material examined in the field and that being studied at the Museum we will be able to determine the number of chromosomes, their structure, and the interrelationships of the various species of *Ephedra*.

## GIFTS TO THE MUSEUM

Following is a list of the principal gifts received during the last month:

## Department of Anthropology:

From: Mrs. W. P. Morrill, Chicago—50 stone axes and broken arrowheads; Col. J. K. Tully, Evanston, Ill.—a whaling harpoon and 2 bone arrowheads, Alaska; Allyn D. Warren, Chicago—a wood carving of Vishnu mounted on Garuda, and a carved wood plaque, Dutch East Indies.

## Department of Botany:

From: Donald Richards, Chicago—50 specimens of marine algae, New Zealand; Dr. George D. Fuller, Chicago—26 herbarium specimens, Illinois and California; University of California, Berkeley, Calif.—126 herbarium specimens, Colombia; Facultad Agronomia de Colombia, Cali, Colombia—170 herbarium specimens, Colombia; Dr. Richard Evans Schultes, Cambridge, Mass.—86 herbarium specimens, Colombia; Louisiana State University, Baton Rouge, La.—

## NEW MEMBERS

(May 16 to June 15)

## Corresponding Members

Brother Léon  
(Joseph S. Sauget y Barbier)

## Contributors

John W. Moyer, Mrs. L. Byron Nash

## Associate Members

George A. Bates, Elmer M. Petersen, G. H. Turner.

## Annual Members

Norman C. Allingham, Philip T. Atwood, Henry B. Auerbach, Mrs. Mildred M. Bianco, Donald Boothby, Dr. Fremont A. Chandler, Miss Lynn Cooperman, Alfred Cowles, Mrs. May Crofoot, Louis G. Davidson, Eric C. Foote, Errett O. Graham, Arthur Halperin, Dr. Robert N. Hedges, Dr. Paul H. Holinger, Robert E. Keeley, Philip M. Klutznick, D. P. Loomis, L. B. McLaughlin, William J. McLaughlin, Sidney H. Morris, Hans Muench, Mrs. Ralph W. Owen, Lawrence A. Petersen, M. H. Petersen, Niels Petersen, Arthur B. Poole, Jr., Robert W. Poore, Dr. Paul D. San Filippo, W. Norman Schultz, Mrs. Claude W. Youker, M. M. Soule, Enoch Steen, Miss Genevieve A. Zaczek.

about 5,000 specimens, mostly sherds, but including artifacts of stone, bone, shell, and fired clay, Louisiana.

## Department of Geology:

From: R. T. Thompson, Phoenix, Ariz.—an aragonite specimen, Arizona; Charles M. Barber, Flint, Mich.—2 turtles, Alabama.

## Department of Zoology:

From: Chicago Zoological Society, Brookfield, Ill.—2 mammals; Lincoln Park Zoo, Chicago—a mammal and a diamondback rattlesnake, Asia and Florida; Miss Carolyn M. Cory, Homewood, Ill.—an ovenbird, Illinois; Dr. Hans Schlesch, Copenhagen, Denmark—11 specimens of freshwater shells, northern Europe; Dr. Thomas D. Allen, Chicago—2 snake skins, South America; Ross Tarrant, Wilmette, Ill.—26 miscellaneous fishes, Florida and West Indies; Harvey Hall, Homewood, Ill.—a Connecticut warbler, Illinois; Clyde P. Stroud, Chicago—a frog, New Mexico; Walter J. Eyerdam, Seattle—14 South American land shells; Robert T. Thompson, Phoenix, Ariz.—2 desert snail shells, Arizona; Dr. José O. Nolasco, Palawan, Philippine Islands—2 lots of internal parasites of the dugong, Palawan; Harry Hoogstraal, Chicago—34 beetles and a vial of batflies, New World; Dr. Wolfgang Weyrauch, Lima, Peru—31 lots of South American land and freshwater shells; Joseph H. Shirk, Peru, Ind.—7 mammal skulls, New Mexico, Arizona, and Canada; Dr. Julian A. Steyermark, Barrington, Ill.—69 specimens of freshwater shells in 3 lots, Missouri; Mrs. Hazel B. Gay, Chicago—17 insects, Mexico and Guatemala.

## Library:

From: Carnegie Institution, Washington, D.C.; J. Lensly Gressitt, Canton, China; Archie F. Wilson, Flossmoor, Ill.





Cutler, Hugh C. 1949. "Botany Research Widened by Southwest Expedition." *Bulletin* 20(7), 7-8.

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