photographic negatives and a large number of duplicates and fragments from the collections of early botanical explorers of the American tropics. These now constitute one of the most important parts of the department's reference collections. Photographic prints of these types have been supplied to many other institutions.

A special herbarium of lower plants has been organized in recent years and therewith the care of fifty years' accumulation of algae, hepatics, mosses, lichens and fungi—including the large Harper collections of fungus and lichen acquired by gift—has been placed, like the herbarium of flowering plants, in the competent hands of a specialist.

Thanks to the industry of the staff of the department, its publications are voluminous, ranging from popular leaflets to important technical contributions to scientific literature. Outstanding unfinished works in progress include a *Flora of Peru* by J. Francis Macbride, and a *Flora of Guatemala* by Paul C. Standley and Dr. Julian A. Steyermark. Both of these works, including many sections contributed by other specialists, are based chiefly on collections obtained by a series of Field Museum expeditions.

FIFTY YEARS OF MINERALOGY AND PALEONTOLOGY

By HENRY W. NICHOLS

CHIEF CURATOR, DEPARTMENT OF GEOLOGY

To a geologist, of course, a million, or even a hundred million years is only a short time—since we deal (like astronomers, and some politicians) in figures running into billions. Thus, fifty years to one in this department, regarded from the purely scientific point of view, is but a fraction of a second in geological time. But to us as individual human beings, fifty years is just as long as to anyone else.

Henry W. Nichols

I came to Field Museum as Curator of Economic Geology in July, 1894, two months after the opening day, and eight months after the first specimens were brought into the building. The department staff then consisted of a Curator of Geology, the late Dr. Oliver C. Farrington, and myself. The only assistant was a label writer, who wrote labels for the specimens with India ink on buff cardboard. This force was obviously inadequate, and has since been gradually enlarged until now there are six curators and assistant curators and seven preparators and other assistants.

OLD CASES INADEQUATE

The specimens which came by gift and purchase from the World's Columbian Exposition were more than ample to fill the exhibition space of the twenty-one halls assigned to the department. Most of them had been numbered and roughly catalogued in temporary

METEORITE AS EXHIBITED IN THE '90's

books. I found all twenty-one halls installed, although in a few of them the installation was little better than orderly storage.

The specimens were displayed in crude, cheaply built cases obtained from the exposition. The only exception was the gem collection in H. N. Higinbotham Hall, which was installed in well-built cases of as good design as any of that period, although not to be compared with those of the present installation. These cases, however, were far from dustproof, and much of the time of the two curators was taken up with attempts to keep the specimens reasonably neat and clean. Cases had not been provided for some of the large specimens, and these were displayed on platforms placed either in the center of the halls or against the walls.

The collections were classified into the same sections—paleontology, mineralogy, etc.—that appear in the present installation, plus an addition of a section of metallurgy which has since been discarded. Twelve of the twenty-one halls, more space than at present, were assigned to economic geology. The weakest

RESTORATION OF MESOHIPPUS, AN EXTINCT THREE-TOED HORSE—HALL 38

section was that of vertebrate paleontology which, although it contained much excellent material, failed lamentably to illustrate its field. So great and so numerous were the gaps that, in 1898, Mr. Elmer S. Riggs (who retired only a few months ago) was appointed Assistant Curator (and later Curator) of Paleontology, and he began the expeditions which have enlarged the collection into one of the greatest in the country. The invertebrate paleontology collection contained thousands of specimens and was especially strong in European material, yet there were many serious gaps which have since been filled by collecting and by gifts.

The mineral collection was large and excellently installed, although the poor furniture in which it was placed and the hand-written labels seriously detracted from its appearance. Both in quantity and quality it was much inferior to the present display. The meteorite collection contained examples of 180 falls, and numerous casts of specimens. As the latter attracted little attention, they have been withdrawn to make room for more meteorites. At that time it was considered a large collection, although small compared with the 826 falls represented in the present exhibit. This collection so interested Dr. Farrington that he made an intensive study of meteorites which continued over many years until he became one of the world's leading authorities on the subject. To facilitate his studies, a well-equipped chemical laboratory was soon provided where the Curator of Economic Geology spent much time analyzing meteorites.

The collection of ores was large and probably more complete than the collection in any other museum, but the installation needed drastic revision—a task that required several years of hard work. The collection of industrial minerals was large and inclusive, but the drab installation robbed it of its full interest. However, even in its first year the collection, in spite of crudities of installation, took its place among the greater and more complete geological exhibits of the country. It was at once realized by the staff that great improvements in the installation were needed if the exhibit was to have the attractive appearance and educational value it should have, and the planning of an improved installation has occupied much of the time of the curators ever since. The old cases from the World's Fair were gradually replaced by better ones, and many of these in turn have later been replaced by still better types. The hand-written labels were soon replaced by printed ones, and better methods of supporting specimens in the cases were devised. Additions from expeditions, gifts and purchases have so enlarged and improved the collections that they are now far more extensive and valuable than in those early days.

RECENT REORGANIZATION

After some years it gradually became apparent that the exhibit appealed more to the scientist than to the general public. In an endeavor to make the exhibit as complete as possible, the cases of the early installation had been overcrowded with specimens, and each subject was illustrated in the greatest possible detail. The result was overloaded cases producing a monotonous aspect which served to

(*Continued on page 20*)

Snow Leopard of the Himalayas

William V. Kelley
Hall (Hall 17)

The color photographs reproduced on this page, sho
were made by Mr. Clarence B. Mitchell as Researcl
selected from 43 such plates

Cut and Polished Nodule of Copper Ore

Hall of Minerals,
Crystals and
Meteorites (Hall 34)

Restoration of Swiss Lake-Dwellers
(Neolithic Period)

Hall of the Stone Age of the Old World
(Hall C)

; exhibits in the various departments of Field Museum,
sociate in Photography at Field Museum. They are
ıe book *Exploring Field Museum.*

Restoration of an Illinois Coal Age Forest of 250,000,000 years ago

Ernest R. Graham Hall
(Hall 38)

MINERALOGY AND PALEONTOLOGY

(*Continued from page 17*)

confuse and tire the average visitor rather than entertain and instruct him. This trouble was overcome to some degree by improved arrangement, reduction of the overcrowding, and the addition of dioramas and explanatory labels. It finally became evident that if the collection was to have a proper appeal to the public a further drastic reorganization was

EARLY MINERALOGY EXHIBIT

called for. Plans were prepared for this and a complete reinstallation has now begun. Under the new plan, each subject is illustrated by fewer specimens which demonstrate simply and plainly its essential features. Installations, too, are designed in a far more attractive manner. The multitude of specimens necessary to illustrate fully details that are of great importance to the scientist but of little interest to the average visitor have been transferred to a study collection not open to the general public. There they can be better studied by scientists or others who have real need to consult them, with the additional advantage that they may be handled as they could not if on public exhibition.

Owing to interruptions from the war, the current reinstallation has barely begun, but examples may be seen in the industrial mineral exhibit in Hall 36 and in the vertebrate paleontology collection of Ernest R. Graham Hall (Hall 38) where the rearrangements are well advanced. When normal times return, reinstallation work will be resumed on an intensive scale which, it is hoped, will further improve this department.

FIFTY YEARS OF ZOOLOGY

By KARL P. SCHMIDT

CHIEF CURATOR, DEPARTMENT OF ZOOLOGY

The Department of Zoology has grown from an original staff of four to twenty-seven, from limited exhibits of poor quality to a wealth of the finest modern preparations, from a few thousand research specimens to hundreds of thousands, and from Publication No. 1 to shelves of volumes embodying fifty years' research. Ward's Natural Science Establishment collection, valued at $100,000, after exhibition at the World's Fair of 1893, formed the nucleus of the Museum collections. Included were numerous rare animals, but as the taxidermy was old-fashioned, replacement and remounting was immediately begun. Field Museum took an extremely important part in the development of taxidermy as an art after the arrival (in 1896) of Carl E. Akeley. During Akeley's twelve years of service, he made two expeditions to Africa, and after perfecting his sculptural methods in taxidermy, turned out a whole series of superbly mounted African animals. His contribution to the modern "habitat group" idea, in

Karl P. Schmidt

NO EXHIBITS LIKE THIS TODAY