THIRTY-SEVENTH ANNUAL REPORT OF THE CARNEGIE MUSEUM

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Herbarium and during the latter part of the year certain FERA assignments were similarly made. It is due to this assistance that such substantial progress has been possible in the mounting and otherwise preparing specimens for incorporation into the Herbarium.

Through the enthusiastic assistance of Rev. John Samuel there were secured some exceptionally fine specimens of plant fossils from strata about fifty feet above the Pittsburgh Coal vein in Elliott, in the southwestern part of Pittsburgh. One large slab of rock thus obtained shows in a remarkably good state of preservation the imprints of fronds of the seed-fern, *Neuropteris rarinervis*, nearly three feet long. Other slabs contained fine imprints of *Neuropteris angustifolia*, and other specimens contained more fragmentary material of these and other Carboniferous plant fossils.

Various Graduate students from the University of Pittsburgh have pursued studies in the Herbarium during the year. Mr. H. S. Wieand has been working with the local fungi, and has presented many of his specimens to the Herbarium; Miss M. E. McClelland is pursuing work on the bryophytes of southeastern New York; Mr. Sidney K. Eastwood is making a special study of the mosses of Butler County, Pa., and has presented many specimens to the Museum; and Mr. John Lewis is making a botanical survey of Fayette County, Pa., and has given freely of his collections to the Herbarium.

The Herbarium Room has continued to serve as the general Headquarters of the Botanical Society of Western Pennsylvania both for meetings and for general reference and study, and the members of that organization have continued to contribute materials to the collections. The members of the staff of the Section of Botany have endeavored to the best of their ability to make the Section of Botany useful both to the general public and to the more serious minded students and investigators.

The Curator and his able associates should be highly complimented upon their zeal and good will in their

attention to their numerous regular duties and their self-imposed obligations.

SECTION OF VERTEBRATE PALEONTOLOGY

Largely through the generosity of Mr. Childs Frick, Messrs. J. LeRoy Kay and F. W. Kohler of the Section of Vertebrate Paleontology spent three months during the summer on a combined reconnaissance and collecting expedition to the Tertiary formations of Wyoming and Utah. The greater part of the time was spent in the Wind River Basin, Wyoming, in the study of the Wind River and Beaver Divide Eocene formations and the overlying Oligocene strata. This work was conducted primarily to establish faunal relationships of these formations to the Upper Eocene and Lower Oligocene formations of the Uinta Basin, Utah, where so much work has been done by the Carnegie Museum in past years. Several specimens were collected from the Uinta formation of the Beaver Divide section from which formation only a few specimens were heretofore known. The specimens from both the Beaver Divide Uinta sediments and the more fossiliferous Wind River strata are the first accessions to be acquired by the Carnegie Museum from these two very interesting formations.

From the Wasatch formation of the Snake River district in Carbon County, Wyoming, several specimens of *Eohippus*, mostly young individuals, were collected. It is hoped that this locality can be explored further in the near future.

Exchanges were made with the Los Angeles Museum whereby the Carnegie Museum has acquired, to date, five mammal skeletons from the Rancho LaBrea asphalt pits in exchange for dinosaur material. These mammal specimens, *Smilodon californicus*, *Mylodon harlani*, *Equus occidentalis*, *Bison antiquus* and *Aenocyon dirus*, have been cleaned and that of *Smilodon californicus* has been mounted for exhibition; also, the mounting of *Mylodon harlani* is nearing completion. This work has been excellently

carried on by Mr. Serafino Agostini, assisted by Mr. Joseph Yarmer.

A model of *Smilodon californicus* has been expertly prepared by Mr. Harold J. Clement, which is to be placed on exhibition alongside of the skeleton. Mr. Clement is now engaged in modeling a specimen of *Mylodon harlani*.

Exchanges were also made with the Denver Museum whereby, for dinosaurian duplicate material, the Carnegie Museum is to receive a skeleton of an undescribed species of Mammoth with all the preliminary work of preparation for mounting completed; a skeleton of *Bison taylori* from the Folsom Quarries of New Mexico, where the remains of bisons were found together with artifacts, similar examples of which will be also released; a skull and jaws of the titanothere *Symborodon;* and a series of skulls and jaws of the rhinoceros *Trigonias*. According to information from Mr. J. D. Figgins, Director of the Denver Museum, the greater part of this material will be shipped in January. There has already been received, mounted, and placed on exhibition, a skeleton of *Archaetherium mortoni*. Members of the staff of this Section are now engaged in the preparation of skeletal material, designated as Diplodocus number 150, for shipment to the Denver Museum.

Under the direction of Mr. L. S. Coggeshall a considerable amount of dinosaur material has been freed from the matrix. A few bones of various individuals were worked out for identification prior to their proper cataloguing and use as exchange material.

In November and December a replica of the skeleton of *Diplodocus carnegiei* was assembled, repaired, boxed, and shipped to Munich, in completion of an exchange of fossil material received some five years ago.

Mr. Agostini made some excellent moulds and casts of the skulls of *Apatosaurus* and *Diplodocus* during the year and one of these skull casts has been mounted on our great skeleton of *Apatosaurus* which stands in the exhibition hall. The original skull of *Apatosaurus* has been placed in a case below the skeleton.

Plans have been made for the rearrangement and the systematic display of exhibits in the mammal and reptile exhibition galleries. Some exhibits have already been taken from the halls and others changed. It is hoped that this work will be accomplished in the near future after the arrival of specimens promised by other museums in exchange and with the necessary alterations in the galleries.

Probably the most laborious task and the most needed improvement taken up by the Section during the past year was that of the systematic arrangement and cataloguing of the collection, which, through the lack of proper store room and sufficient help, had been much neglectd in the past. The acquiring, by exchange, of the room adjoining the laboratory, formerly occupied by the cabinet shop, made this possible. Steel racks and plank shelves were constructed and the specimens were arranged in order and recatalogued. While the cataloguing is not yet completed the progress so far achieved is very gratifying.

Mr. F. W. Kohler, in addition to his special assignment of preparing a catalogue of the type specimens, has had this cataloguing in charge. Assisted by Mr. Paul Rosenberg, a C.W.A. worker, he completed the cataloguing of the O. A. Peterson library recently acquired by the Museum.

Many type and other specimens have been lent during the year to various institutions for comparison and study.

As usual, talks to various organizations and instructions to classes were given by members of the staff.

Miss Edytha Kay, working gratuitously, has typed the catalogue of the specimens in the Section and done other secretarial work.

Mr. John J. Burke was busily engaged in a variety of duties concerning the current matters of the Section where he collaborated with Mr. Kay and carried on special studies pertaining to certain groups of fossil mammals. He also devoted considerable time to prepar-

ing for publication some of the papers written by the late O. A. Peterson.

The Carnegie Museum was very fortunate to secure through the courtesy of the United States National Museum in Washington the temporary services of Mr. Charles W. Gilmore for the preparation of a monograph on *Apatosaurus louisae*. He completed an extensive and erudite paper on this gigantic extinct reptile adorning our Hall of Fossils, and his treatise will soon appear in the Memoirs of the Museum. Mr. Gilmore is particularly well qualified to treat this subject since he took part, in former years, in the paleontological research conducted by the Carnegie Museum and is familiar with the Dinosaurian collections of this institution.

SECTION OF INVERTEBRATE PALEONTOLOGY

As usual the work of the Section consisted of collecting, preparing, and identifying invertebrate fossils, distributing them among the collections of the Section, and describing monographically a few of them. For the benefit of the Pennsylvanian geologists who held, last year, their regular spring field meeting in Pittsburgh, the Section exhibited local fossils collected in the different horizons known in the Pennsylvanian strata of western Pennsylvania, West Virginia, and Ohio. These collections were commented upon favorably by visiting geologists and have been of great help to local collectors.

During Christmas week the Carnegie Museum, like the other scientific institutions of Pittsburgh, was the host for the meeting of the American Association for the Advancement of Science held in this city. For the geologists and paleontologists who attended this meeting the Section exhibited a part of the highly important collection of Paleozoic sponges purchased by the Museum during last autumn. In 1932, Mr. E. R. Eller and Dr. I. P. Tolmachoff made several excursions in the western part of the State of New York and visited localities from which a number of Devonian Sponges had been described

by the geologists, Professor James Hall and Dr. John Clarke. To the great disappointment and discouragement of both museum collectors they were unable to find even occasional fragments of sponges. In his effort to verify these localities Mr. Eller applied to local residents and in this way he learned of a large private collection of fossil sponges preserved at Wellsville, New York. The first examination of the collection showed that, among the thousands of specimens, it contained a number of the types of Professor Hall and Dr. Clarke. The collection was brought together by Mr. E. B. Hall who collected during many years with such zeal that he practically exhausted the localities. At the conclusion of several long conferences with the owner of the collection, Mr. Eller succeeded in buying it for the Carnegie Museum. After final revision it was found that among the more than five thousand specimens there are eighty-one types of Hall and Clarke. A large part of the remaining material was identified by the same paleontologists, but many specimens were collected after the work of the latter had been done and these await further study and description. The transportation of this collection from Wellsville, New York, to Pittsburgh, Pennsylvania, took seven trips on the part of the Museum truck and each time the truck was loaded to its full capacity.

The great amount of time and work taken up by the new sponge collection prevented the completion of the rearrangement of the systematic paleontological collection which had been planned for last year. This latter collection was purchased from Ward's Natural Science Establishment many years ago. Although excellent in the selection of species and specimens, the collection left much to be desired in the way of exhibition and labeling, and it was particularly inadequate in the explanation of the different phenomena of fossilization. The objective of the planned rearrangement is to bring into uniformity the labels, and the kind of mounting of fossils, and to furnish new explanations when needed.

Last year a cast of Diplodocus was sent to the Paleon-