In case A are the Tarascan terra-cotta figures and stone sculptures secured by the Lumholtz expedition.

In case B, on the east end of the hall, are original sculptures in stone from Copan and Yucatan.

In case N is a collection, also from the Lumholtz expedition of pottery from the ruins of Casas Grandes, illustrating a culture approaching that of the ancient Pueblo people of Arizona and New Mexico.

In three other cases at this end of the hall, and several cases at the opposite end, are various collections, including jadeite ornaments, copper implements and ornaments, carved stone yokes, a large terra-cotta human figure, and pottery vessels of many forms, all illustrative of the culture of several of the ancient Mexican peoples.

Cases C and D contain the collections made by Dr. Seler in Mexico and Guatemala, and presented by the Duke of Loubat. In another case are terra-cotta figures of great value found over a tomb in a mound at Xoxo by Mr. Saville of the Museum expedition. A cast of the inscribed stone lintel of the door, and many vessels found with skeletons in this tomb, are most interesting objects.

The ancient Mexicans and Mayas had many manuscripts or codices consisting of picture-writing and of hieroglyphs. These were on prepared deer-skin or on native paper made of maguey fiber and coated with a kind of white cement. Several of these codices were sent to Europe soon after the Conquest, and others have since been found. They are of the utmost importance; but, being few in number and widely scattered, they were of little use until reproduced in facsimile, so that every student could have access to them for comparative study. In the two cases in the center of the hall, and in the frame over them, are a number of copies of these important records. For these the Museum is indebted to the Duke of Loubat, at whose personal expense several of these manuscripts have been reproduced in facsimile.

There is thus brought together in this Mexican Hall of the Museum the most important collection in existence for the study of the ancient civilization of Mexico and Central America.

F. W. PUTNAM.

HARVARD UNIVERSITY.

CORRESPONDENCE RELATING TO COLLECTIONS OF VERTEBRATE FOSSILS MADE BY THE LATE PROFESSOR O. C. MARSH.

THE following copies of letters have been sent to the Editor of SCIENCE by Hon. Charles D. Walcott, Director of the United States Geological Survey.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
WASHINGTON, D. C., May 5, 1891.

THE DIRECTOR,
U. S. GEOLOGICAL SURVEY,
WASHINGTON, D. C.

SIR:

* * * * * * *

The large collections of vertebrate remains in the charge of Professor O. C. Marsh, at New Haven, Connecticut, are kept in the fire-proof Peabody Museum building, and in a large storage shed adjoining. The method of recording is somewhat different from the other collections, but it is very thorough and complete.

In the field where the specimens are collected a label is placed inside of each box as it is packed. On this U. S. Geological Survey is printed in bold letters. On the outside of the box U. S. Geological Survey is plainly marked before the boxes are shipped. When received at Professor Marsh's laboratory in New Haven, a record is made of each box received and to each an entry number is assigned. This

number is at once recorded on the box and, when the box is opened, on the label and on each and every specimen contained in the box with an oil paint. When it is necessary to remove a number in working out specimens from the matrix, the number is copied on some other portion of the rock or directly on the fossil before it is removed from the other portion. This number is the record of locality, stratigraphic position, and history of discovery; additional information is added from time to time under the number in the record book. This includes the identification of the genus and species and any data that may be of importance. The removing of the number from any specimen at once deprives it largely of scientific value, and it is to the interest of every one working on the collection to have it kept intact. When the final work is done and the specimen is identified, labeled with its name and ready for exhibition, it then receives a catalogue number. The old number, however, still follows it in the record of the latter.

The record of the entry number is kept in duplicate and Professor Marsh is now preparing another duplicate set to be filed with the Geological Survey. This record will show the number of boxes of specimens received, from 1882 to 1891. The laboratories and storage rooms provided by the Yale University Museum represent a floor space of over 9000 square feet, for which the Geological Survey does not pay rent. In addition to the collection at New Haven, there are seventy boxes of vertebrate fossils stored in the Armory building in Washington, and a collection is now being prepared for exhibition in the United States National Museum.

* * * * * * *

Respectfully yours,

(Signed) Chas. D. Walcott,
Paleontologist.

Department of the Interior,
United States Geological Survey,
December 8, 1899.

Professor S. P. Langley,
Secretary, Smithsonian Institution,
Washington, D. C.

Dear Sir: I have the honor to state that all the vertebrate collections of the late Professor O. C. Marsh, belonging to the Government, have been shipped from New Haven, Conn., and are now transferred to the custody of the U. S. National Museum, subject only to the use of such material as may be necessary for study and illustration in the completion of the monographs that were in course of preparation by Professor Marsh at the time of his death.

From a statement submitted by Mr. F. A. Lucas, who had charge of the packing of the collections, it appears that there were 1200 trays (20–26 inches) of specimens, 200 unopened boxes as received from the field, 30 blocks and 90 prepared specimens. To ship this material required 592 boxes, forming five car loads, having an aggregate weight of 160,000 pounds. To this there should be added two car loads containing 211 boxes received from Professor Marsh on deposit in 1891 and 1898.

The actual number of specimens represented in this collection cannot be stated. They range in size from minute teeth of fossil mammals to individual specimens weighing from 500 to 2000 pounds each. The collections are rich in large Dinosauria, especially in examples of *Triceratops* and *Stegosaurus*, while the series of Titanotherium skulls is one of the best, if not the best, in existence. It contains 50 or more complete examples cleaned, and a number in the rough, besides many hundred bones.

Among the specimens transferred are the types of 40 or more species, including Dinosaurs and Jurassic, Cretaceous and Terti-

ary mammals. Among the types are the following:

DINOSAURS.
Diplodocus longus.
Labrosaurus ferox.
Camptosaurus nanus.
Triceratops sulcatus.
Triecratops californis.
Triceratops obtusa.
Pleorocœlus nanus.
Ceratosaurus nasicornis.
Ceratops montanus.
Ceratops alticornis.

CROCODILES.
Rhytidodon rostratus.

SNAKES.
Coniophis precedens.

JURASSIC MAMMALS.
Paurodon valens.
Manacodon rarus.
Enneodon crassus.
Enneodon affinis.
Laodon venustus.

CRETACEOUS MAMMALS.
Priconodon crassus.
Cimolodon agilis.
Telacodon præstans.
Oracodon cenulus.
Allacodon pumilis.
Batodon tenuis.
Allacodon fortis.

I requested Mr. Lucas to make an appraisement of the value of the specimens. He states that this is a very difficult thing to do, but that many of the specimens could not be replaced, and some specimens, like the skulls of the *Triceratops*, should be worth at least $5,000 each, while crania of *Titanotherium* are worth from $50 to $250 each, according to perfection, and that an estimate of the value of the entire collection will be upwards of $150,000. This is, of course, tentative, as some of the material has not been worked out at all, and some not removed from the boxes in which it was shipped from the field.

It is to be recalled that these collections were made by Professor Marsh during his connection with the Geological Survey, from 1882 to 1892 inclusive; that prior to his connection with the Survey he made large collections, including the toothed birds, the *Dinocerata*, *Brontosaurus*, many Dinosaurs, and the best *Titanotherium* yet discovered. He also purchased numerous collections after the stopping of allotments for his work in 1892. These collections were transferred to Yale University some time prior to his death.

As there has been considerable comment in relation to this matter, I send you a copy of a report on the examination of the collections under Professor Marsh's charge, made by me to the Director of the Geological Survey, in 1892.

I twice visited New Haven while the collections were being packed, and am fully convinced that all material belonging to the Government has been transferred to Washington. Mr. Lucas reports that the Trustees of the Peabody Museum in New Haven gave him every facility for packing the collections, and that the records were so complete that no difficulties arose in determining those specimens which belonged to the Government and those which were the property of the Peabody Museum.

The transfer of these great collections to Washington without the loss of any material, either through imperfect recording or through misunderstanding as to the ownership of specimens, reflects the greatest credit on the business-like methods and the integrity of Professor Marsh. The addition of the material to the National Museum places it in the front rank among museums in its collection of vertebrate fossils. It is necessary that some gaps in the collections be filled, and I sincerely trust it will be possible for the Museum to do this at an early date.

Yours respectfully,

(Signed) CHAS. D. WALCOTT,
Director.

INCLOSURE.

SMITHSONIAN INSTITUTION,
December 22, 1899.

DEAR SIR: I take great pleasure in acknowledging the receipt of your letter of the eighth instant, advising me that you have transferred to the National Museum all the vertebrate fossils collected by the late Professor O. C. Marsh belonging to the United States Government, subject only to the condition that such material as is required may be used for study and illustra-

tion in completing the monographs which were in preparation by Professor Marsh at the time of his death.

The addition of this immense collection of most important American fossil remains to the treasures already assembled in the National Museum will, I am sure, afford the greatest satisfaction to all workers in the field of paleontology both at home and abroad, and you will permit me to add a personal word in appreciation of your untiring efforts to facilitate in every way possible the great task connected with the removal of the collection from New Haven to Washington.

During the coming year I expect to have two preparators engaged in working out of the matrix specimens still uncleaned, and confidently hope that it may be possible in a few years to have the entire collection made available for study and a selected series for public exhibition. From this latter series the public will be able to form a correct idea as to the number, variety and great size of these wonderful extinct creatures of the western country, and will undoubtedly be impressed with the extent and importance of the work of the paleontological divisions of the Geological Survey and the marvelous industry and intelligence displayed by Professor Marsh in bringing together this great collection.

Yours respectfully,

(Signed) S. P. Langley,
Secretary.

The Honorable Charles D. Walcott,
Director United States Geological Survey,
Washington, D. C.

SCIENTIFIC BOOKS.

On the Building and Ornamental Stones of Wisconsin. By E. R. Buckley, Ph.D. Bull. No. IV. Economic Series No. 2. Wisconsin Geological and Natural History Survey. 1898.

The first attempt at a systematic investigation of the building stones of the United States was undertaken by Dr. G. W. Hawes under the auspices of the 10th Census. With the untimely death of Dr. Hawes the completion of the work fell into the hands of others, none of whom were experienced and some of whom had received no training such as should fit them for special investigations of this nature. Under such conditions it is not strange that the printed volume* should have been somewhat disappointing. Nevertheless it furnished a beginning and at least served to show what was not known on the subject.

This was followed in 1887 by Merrill's Handbook of the Collections of Building and Ornamental Stones in the United States National Museum,† which was based upon the Census Collections; and later by Stones for Building and Decoration (Wiley & Sons, New York), the first edition of which appeared in 1891 and the last in 1897. The above constitute the only comprehensive systematic treatises compiled with reference to the United States that have thus far appeared.

Several excellent special and local reports have, however, been made, among which should be mentioned Winchell's report on the building stone of Minnesota,‡ and the reports of Smock on those of New York;§ Williams on the Syenites of Arkansas;‖ Hopkins on the Marbles of Arkansas,¶ the Brownstones of Pennsylvania,** and the Carboniferous Sandstones of Western Indiana;†† Macallie on the Marbles of Georgia;‡‡ H. F. Bain on the

* Special Report on Petroleum, Coke and Building Stone, Vol. X., Rept. 10th Census, 1884.

† Rep. U. S. National Museum, 1886, pp. 275–648.

‡ Vol. I., Final Report on the Geology and Natural History of Minnesota, 1884, pp. 142–194.

§ Bulls. No. 3, New York State Museum, 1888, and Vol. III., No. 10, 1890.

‖ Ann. Rep. Geological Survey of Arkansas, 1890, Vol. II.

¶ Ann. Rep. Geological Survey of Arkansas, Vol. IV., 1890 (1893).

** The Building Materials of Pennsylvania, I. Brownstones, Appendix to Ann. Rep. of the Penna. State College for 1896, pp. 122.

†† 20 Ann. Rep. Dept. of Geology and Natural Resources of Indiana, 1896, pp. 186–325.

‡‡ Bull. No. 1, of the Geol. Survey of Georgia, 90 pp. 1894.