estimate of the man's work which has recently been formed by the calmer study of the unprejudiced, will only be helped by the appearance of this thoroughly good work. It is all that an autobiography should be. There is no self-laudation, no posing for effect, and no fulsome praise.

In an ascending scale we follow him through Turkey, the Levant and Abyssinia. During these campaigns he became famous for the accuracy of his work; and his energy in getting it to his publishers was so great that some of his competitors seemed inclined to doubt its authenticity until the more tardy reports verified his statements. In the following years, during the search for Livingstone, the war in Ashanti land and the search for Emin Bey, the description of the terrible difficulties encountered were undoubtedly the cause of the disbelief so frequently expressed with regard to his results. Stanley was not a scientific man, but his keen observation of facts and his conscientious performance of duty must over-balance many defects in this line. The pioneer work of the first man traveling along these lines of greatest resistance must have been savage work indeed, and demanded every ounce of vitality of the most capable explorer of his day, if not of any time, and the wonder is that so few mistakes were made.

Immediately upon his return to Europe he sought to make his work of practical value, and here again he encountered the wildest sort of antagonism. His success and his after life are matters of history and this volume records them in a most pleasant and readable manner.

WILLIAM LIBBEY

PROGRESS OF PALEONTOLOGICAL RESEARCH BY THE CARNEGIE INSTITUTE

GENEROUSLY supported by Mr. Andrew Carnegie, whose interest in paleontological research is well known, the Carnegie Museum of Pittsburgh has during the past year made many forward strides. The work of extricating from the matrix some of the skulls of the mammalia found in the summer of 1908 in the Uinta Basin by Mr. Earl Douglass was diligently prosecuted during the early part of 1909, and Mr. Douglass has published in the *Annals of the Carnegie Museum* a brief account of three new Titanotheres from the Upper Eocene. These three species represent only a few of the large number of interesting forms recovered by Mr. Douglass during the expedition of 1908. A number of fossil turtles apparently representing an equal number of species were also recovered from various levels. These have been partially prepared for study and will be submitted for description to a specialist in this group. The nearly perfect skeleton of *Moropus elatus* recovered during the explorations made in western Nebraska during the years 1906 to 1908 has been freed from the matrix and prepared for mounting. A monographic paper giving an account of the osteology of the animal is in course of preparation by the Curator of Vertebrate Paleontology. Nearly twenty skeletons, some of them absolutely complete and others approximately complete, belonging to two species of the cameloid genus *Stenomylus,* were recovered in 1908 and 1909 by Mr. O. A. Peterson. Several of these skeletons have been worked out from the matrix and two of them have been prepared as slab-mounts and are now on exhibition in the museum. A singularly perfect skeleton of a carnivore, revealing features common to the Canidæ and the Felidæ, and not distantly related to *Daphœnus felinus* Scott, has been extricated from the matrix and mounted for exhibition. A paper upon this specimen is in course of preparation by Mr. O. A. Peterson.

Mr. Earl Douglass since June has been busy making collections in various geological formations in Utah. In August he discovered three dinosaurs with the skeletons apparently completely articulated. Under the direction of the curator of paleontology he is spending the winter in Utah engaged in carrying forward the work of taking up the remains of these colossal animals. Mr. Douglass's camp is located at a considerable elevation, but he has, so far as possible, forti-

fied himself against the cold winter, and with his wife to supervise the domestic arrangements in camp, and three laborers to aid him, he is endeavoring to rapidly extricate the skeletons from the hard sandstone in which they are imbedded. He writes enthusiastically of his work, and in a recent letter says, "We have found what paleontologists have been searching for for the past forty or fifty years, skeletons of sauropod dinosaurs of huge size, apparently absolutely complete, every vertebra in position, and even the ribs in place—not removed more in any instance than two or three inches from the point where they articulate with the facets of the vertebræ." Every precaution is being taken to recover these specimens as they have been found. A photographic record is being kept of the position of every bone, and it is hoped that when the great undertaking is completed a very important addition will have been made to our knowledge of the osteology of the sauropod Dinosauria. One of the interesting features in this connection is the discovery of the sternal ribs, which never have hitherto been found in position in connection with the Sauropoda.

Dr. Percy E. Raymond has been during the past year carrying on extensive researches in the region of Pittsburgh, and has made valuable and interesting observations upon the strata of western Pennsylvania, upon which he will shortly publish, showing the existence of extensive marine faunæ at points where such deposits were hitherto not known to exist. He has also been successful in discovering some new species of invertebrates, as well as the remains of some vertebrates. His studies are calculated to throw great light upon the formations of the region, which have hitherto been only superficially examined.

Two replicas of the skeletons of *Diplodocus carnegiei* were prepared and in the fall of the year were presented, one to the Emperor of Austria, the other to the King of Italy. The first specimen is located in the Imperial Museum at Vienna, the second in the Museum of the Istituto Geologico at Bologna. These replicas were made at the expense of Mr. Andrew Carnegie and presented on his behalf to the Emperor and the King by Dr. W. J. Holland, who, with his assistant, Mr. Coggeshall, set them up. Dr. Holland was personally received by the Emperor of Austria, who conferred upon him the cross of an Officer of the Order of Francis Joseph, and conferred upon Mr. Coggeshall the cross of the Order of Merit, surmounted with the crown. The King of Italy has conferred upon Dr. Holland the cross of Commander of the Crown of Italy, and upon Mr. Coggeshall the cross of Chevalier of the same order. In recognition of Mr. Carnegie's generosity the authorities of the city of Bologna have sent to the library of the Carnegie Museum a complete set of the writings of Aldrovandi, in thirteen volumes in the original binding. The set is singularly beautiful and well preserved. The Istituto Geologico at Bologna has presented to the Carnegie Museum a series of beautiful specimens of the fossil fishes of Monte Bolca, which are being prepared for exhibition.

One of the interesting accessions to the paleontological collections of the Museum during the past year has been an enormous tusk of *Elephas columbi* Falconer, found on the banks of the Allegheny River in the suburbs of Pittsburgh. It was washed out during a freshet. It is nearly nine feet in length.

During the year a beautifully mounted skeleton of *Portheus molossus* Cope, fifteen feet in length, the most perfect in existence in any museum, has been mounted and placed upon the walls.

The vertebrate material obtained and accessed for the museum during the past twelve months is extensive, aggregating many hundreds of numbers, and the invertebrate material is even more extensive.

* * * *

OPTICALLY ACTIVE SUBSTANCES CONTAINING NO ASYMMETRIC ATOM

The statement is frequently made that optical activity is due to the presence in the