

Rodentia' (with J. A. Allen), 1877; 'Birds of the Colorado Valley,' 1878; 'Bibliography of Ornithology,' various installments, 1878-1880; 'New England Bird Life' (with W. A. Stearns), 1882; 'Dictionary and Check-List of North American Birds,' 1882. For four years he edited the publications of the Hayden Survey. Unfortunately only a small portion of his invaluable 'Bibliography of Ornithology' was ever published, but the published part has been of the greatest service to all workers on American birds, to which these portions mainly relate.

No work doubtless has had such a beneficent influence upon the progress of American ornithology as Coues's 'Key,' originally published in 1872, and republished in 1884 as a practically new work. During the last two years it has again been rewritten, and again transformed and brought down to date; we understand the manuscripts were left in such condition that the work will soon go to press, and will doubtless prove a lasting monument to the industry and skill of its gifted author.

Dr. Coues was not lacking in scientific honors. In 1877 he was elected a member of the National Academy of Sciences; he was also a member of all the more prominent American scientific societies, and of many foreign academies and societies. He was one of the founders of the American Ornithologists' Union, at one time its president, and always a member of its council and more important committees. He took a most earnest interest in its welfare and fame, and always viewed with satisfaction and pride his share in its organization and achievements, and his death will be held as a personal loss to his fellow members.

As I have said elsewhere (*Auk*, January, 1900, p. 91), Dr. Coues, as an all-around ornithologist, occupied a position of first-rank among the cultivators of this science. His influence upon the progress of technical

ornithology in America is only second to that of Baird; as a popular writer on birds he was without a peer. His rare literary gifts rendered him a fluent and impressive speaker, and a writer of exceptional readability and originality of expression. His activity was prodigious and his capacity for work phenomenal. Though impulsive and at times somewhat erratic, he had many admirable traits, which none can so well appreciate as those who knew him most intimately.

J. A. ALLEN.

THE NEW DEPARTMENT OF VERTEBRATE
PALEONTOLOGY OF THE CARNEGIE
MUSEUM.

THE organization of this department in the Carnegie Museum during the past year has marked an important advance in the history of this young and growing institution. The unequaled facilities which the western portions of our country afford for the pursuit of this important branch of science have now come to be fully appreciated, and have within the past few years resulted in giving to this study an impetus which a few years ago was totally unknown.

The remarkable consecutiveness of this life record, together with its richness in vertebrate remains, especially in the Mesozoic and the Tertiary rocks, has permitted the gathering of collections of inestimable value when we consider what they contribute to the solution of some of the great problems in biology.

It has always seemed to me that our leading institutions have been unusually slow to recognize the value and importance of these collections, more especially when it is remembered that the greatest development of the science has taken place in this country and has formed such a conspicuous feature of American achievement in scientific investigation. The addition of a new member to the comparatively limited circle,

capable of pursuing the subject in a comprehensive way is always a welcome event in science, and the unusually auspicious circumstances under which this, the youngest member of the fraternity, enters the list to compete for honors gives promise of substantial additions to our knowledge in this line of research.

In conformity with the special wishes of the founder of the Institute, Mr. Andrew Carnegie, the department was duly established during the early part of last year. The present force is as yet small, but this will in all probability be augmented from time to time, as occasion requires, and as the necessary space for the proper installation of the collections is secured.

The purpose of the department is the formation of a general collection illustrative of extinct vertebrate life from its earliest appearance up to the present period. This we hope to secure partly by purchase, but largely through expeditions into the various fossil-bearing horizons wherever such can be undertaken with reasonable promise of success.

The first expedition of this kind which was undertaken into the Jurassic formations of Wyoming has recently been completed, and the success attending this preliminary effort has been very gratifying indeed. The party consisted of the writer, in charge, Mr. W. H. Reed and Mr. Arthur Coggeshall, assistants, together with two laborers. A month was spent in the early part of the season prospecting in the vicinity of the 'Freeze Out' Range, on the western part of the great Laramie plain, Wyoming, where comparatively few specimens of interest were obtained. Early in July the Lower Sheep Creek Basin, in the north-western corner of Albany county, was visited by the party, and a new field of unusual richness was discovered.

That which will prove of the greatest scientific interest and value in the collection,

secured in this place, is the larger part of the skeleton of an herbivorous dinosaur, which was at first thought to belong to the genus *Diplodocus*. Of this almost the entire series of presacral vertebræ, the sacrum, and some fourteen or fifteen of the proximal caudals were secured. There are also a complete set of ribs, a scapula, coracoid, and sternum, a complete pelvic girdle lacking one ilium, and one complete femur; all in a most excellent state of preservation. The remainder of the limbs and the skull were not found, but there is much reason to believe that further excavation will bring them to light. No extended search was undertaken in view of the small force and the comparative lateness of the season when the other parts of the skeleton had been made ready for shipment.

This material, at the present writing, is but partially worked out and prepared for study and exhibition; but from the material already prepared it would appear that the genus which it represents is most nearly allied to, if not identical with that described by Professor Marsh from the Black Hills, South Dakota, under the name of *Barosaurus*. If it should transpire that it belongs to *Diplodocus*, which is somewhat doubtful, it will prove very acceptable in that it will supply us with nearly all the missing parts of the skeleton of this interesting group of dinosaurs. Should it, on the other hand, prove to be a species of *Barosaurus*, it will be yet still more interesting, since the genus is known from but a few fragments of caudal vertebræ, at least so far described.

One other specimen, which is certainly that of *Diplodocus*, was secured, in which a few characteristic bones of the skeleton are represented. Other specimens include considerable parts of the skeleton of *Brontosaurus*, among which is an exceptionally perfect hind limb, most beautifully preserved. This will enable us for the first time to fix

definitely the organization of the hind foot of this rather abundant group of the Sauro-podous dinosaurs. A description of this limb, with some excellent illustrations, will soon be published in the *American Journal of Science*. Still another specimen of great interest, from the underlying marine bed, includes a part of the skeleton with a well preserved skull, of the rare and curious toothless ichthyosaur (*Baptanodon*), originally described by the late Professor Marsh. Besides these, many other specimens were collected, the importance and scientific value of which cannot be fully determined until they are worked out and made ready for study.

The preparation of this material is under the skilful direction of Mr. Arthur Coggeshall, who was for some years connected with the American Museum of Natural History in New York, under the tutorship of that veteran *preparateur*, Mr. Adam Hermann. The material is being rapidly brought into shape for study and exhibition and by the time the new paleontological hall is ready for occupancy, we hope to have a good representation of Jurassic dinosaurs at least.

The department has been exceedingly fortunate of late in securing the services of Mr. O. A. Peterson, late of Princeton University, and previous to that of the American Museum and the U. S. Geological Survey, as chief assistant curator of the department. Mr. Peterson's skill and energy as a collector of vertebrate fossils, as well as his extensive knowledge of the fossil-bearing horizons of our western fields, are well known; he brings to bear a ripe experience (oftimes too lightly valued in the making of a paleontological collection) which cannot fail to be of the greatest advantage to the department in the acquisition of materials.

The work for the coming season will include, besides the continuance of the unfin-

ished exploration in the Jurassic, two other horizons, which will necessitate practically three separate expeditions. From these sources it is hoped to augment the collections very considerably during the present year.

It has been stated recently in the columns of SCIENCE that the establishment of this department in the Carnegie Museum was due to the supposed discovery of a dinosaur of extraordinary proportions in Wyoming, in 1898, by Mr. Reed. While it may be true that the newspaper accounts published at the time may have hastened action in the matter, yet I know it to be a fact that ever since the founding of the Institute, Mr. Carnegie has had it in mind to bring together a first-class collection of vertebrate fossils as a part of the Museum exhibit. This is not at all surprising when it is known that he had an intimate personal acquaintance with both Professor Huxley and Professor Marsh, than whom, perhaps, no greater exponents of the subject could have been found, whose opinions and discoveries were calculated to make a more profound impression upon his mind relative to the importance and value of such collections for the general advancement of biological knowledge.

The broad basis upon which he has chosen to establish this undertaking, together with the liberal financial support which he grants to it, are sufficient evidences in themselves if no others could be had, that its inception was not due to a ridiculously exaggerated newspaper account of a bogus discovery, but to a well-conceived plan to carry into execution an important step in the growth of the Institute. It must be assumed that in thus establishing and liberally endowing a department of learning and scientific investigation of such a character, one whose results are destined to enter so deeply into the foundations of our future philosophy,

he was not altogether unmindful of the fact that he would be erecting a monument to himself which will endure as long as science is cultivated. Let us hope that these expectations may be realized with the fullest measure of success.

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AN INTERNATIONAL PLAN FOR THE FUTURE STUDY OF THE VARIATION OF LATITUDE.

UP to the present time the study of the variations of latitude, first observationally proved by Dr. Kustner, of Berlin, and developed by the investigations of Dr. Chandler, has been the result of the work of observers who have been specially interested in this subject.

The stations have not been well distributed for a thorough investigation of the interesting problem, because they have, as a rule, been centered near large observatories dealing with other astronomical matters, when they should be less in clusters, and spread over larger but uniform arcs of longitude.

The International Geodetic Association in the year 1898 formulated a plan which went into operation on January 1, 1900. The aim of the Association has been to put in service four stations, on the same parallel of latitude, and as well distributed around the earth as possible.

The four stations chosen, their latitude and the longitude east or west from Greenwich are as follows :

Mizusawa, Japan,	Lat.	39° 08' 07'',	141°	E. L.
Carloforte, Italy	"	39° 08' 12'',	9°	"
Gaithersburg, Md.	"	39° 08' 10'',	77°	W. L.
Ukiah, Calif.	"	39° 08' 12'',	123°	"

As one second of arc expresses about 100 feet for differences of distance near the above latitude, it will be seen that all the stations are within the limit of 500 feet of being on the same parallel line.

Professor Porter's observatory at Cincin-

nati, Ohio, happens to be very near the chosen latitude, and he will also engage in the work, having volunteered to do so.

It is also expected that a station will be established by the Russian government near a city called Tcharjui, and its longitude is 64° east. This observing station is especially important, for it places one between Mizusawa and Carloforte, and 187° from Ukiah.

In the past, many of the astronomers who have given for the use of the student the data necessary for a discussion of the variation of latitude, have made their observations conform to obtaining a correction to the Constant of Aberration from the same material.

The International Association intends that the series of observations which it has just inaugurated shall be made for the distinct purpose of deriving the latitude variation only.

Dr. Albrecht, of the Geodetic Service of Germany, has been greatly interested in formulating the plan of work, and has selected twelve groups, each containing eight pairs of stars. While this is in hand Professor Helmert has advised that each group contain two pairs of large zenith distance, as much as 60°.

Professor Doolittle, at Philadelphia, and Dr. Davis and Professor Rees, of New York, as well as other observers, have noticed in a night's work often an anomalous condition presenting itself in which every pair would clearly indicate an abnormal change of as much as a second of arc from previous and following night's results.

Professor Helmert's idea is to introduce these extra pairs to see if the cause for these marked changes would be more pronounced in those pairs of larger zenith distance.

All the stations are to use the zenith telescope. The instrument has been made by Wanschaff, and has an aperture of a