

sessions will be held. There are in the neighborhood of the University numerous good boarding houses, now empty owing to the absence of students during vacation. The situation of the University with pleasant grounds overlooking the Hudson river, promises reasonable freedom from heat and dust, and ample accommodation both for social intercourse and scientific work.

The Association will be welcomed to Columbia University by President Low, long a member, at eleven o'clock on the morning of Monday, June 25th, and after brief addresses by the retiring president, Mr. G. K. Gilbert and the president-elect Professor R. S. Woodward, the members will separate for the organization of the Sections. On Monday afternoon five of the vice-presidents, Professor Asaph Hall, Jr., Professor Ernest Merritt, Professor Jas. Lewis Howe, Professor J. F. Kemp and Professor William Trelease, will give their addresses, the others being postponed until next year. President Gilbert will give his address at the American Museum of Natural History on the evening of June 26th. Various scientific excursions have been arranged by the different sections, which will be part of their scientific work. A meeting in New York City under the conditions described and at the end of June is certainly an experiment worth making, and there is every reason to believe that it will be successful.

PROGRESS OF THE NEW YORK ZOOLOGICAL PARK.

AMONG the attractive features of the coming meeting of the American Association in New York are the proposed visits to the Botanical Garden and the Zoological Park. These sister institutions are developing rapidly in the northern and southern portions of Bronx Park and both deserve careful study, even in their present unfinished condition. Members of the Association de-

siring to see both parks on the same day will do well to take a Harlem train direct to Bedford Park, walk through the Botanical Garden and buildings eastward to the Bronx river, then southward along the line of the river to the Boston road entrance of the Zoological Park to the northwestern entrance, returning to New York by the Fordham station of the Harlem railroad. Members desiring especially to see the Zoological Park should take the train from 42d street or 125th street to Fordham.

The following extracts from the Fourth Annual report recently issued by the Zoological Society will give some idea of the present state of development of this project. The Zoological Park was formally opened to the public on November 8, 1899; Professor Osborn delivered the address of welcome on behalf of the Society and the Park was formally accepted by Comptroller Coler. During the inclement months of November and December it was visited by 90,000 people; the present attendance on holidays and Sundays averages between 15,000 and 17,000; the attendance since January 1st is 294,000. The Park is thus a thoroughly popular institution. The membership has risen to over 850 and is slowly increasing; a vigorous attempt is being made to raise the membership to 3000, and thus provide an income which will constantly renew the supply of animals and enable the Society to erect a building every other year.

Up to the present time \$10,000 has been expended in the purchase of animals and about \$200,000 in the construction of buildings and other installations. The following ranges and installations are now complete:

Mule Deer Range, Fallow Deer Range and House, Axis Deer Range and House, Ducks' Aviary, Flying Cage, Aquatic Birds' House, Black-tail Deer Range, Virginia Deer Range, Red Deer Range and House, Moose Range and House, Wapiti Range and House, Wolf Dens, Fox Dens, Aquatic

Mammals' Pond, Otter Pool, Antelope Range and House, Prairie Dogs' Enclosure, Burrowing Rodents, Small Mammal House (temporary), Wild Turkeys' Enclosure, Reptile House, Crocodile Pool, Bear Dens, Beaver Pond, Buffalo Range and House.

The Aquatic Bird House is very attractive with a large interior flying cage and an aquarium for diving birds. Adjoining the building is the Ducks' Aviary and the large Flying Cage, which it is hoped to complete before the visit of the Association. The Reptile House is the first of the larger type of buildings to be completed and it is a model of its kind, with an extensive display of tropical and North American reptiles. The fine Crocodile Pool and other well planned installations present a great variety and departure from stereotyped methods of exhibition.

The city has thus far expended \$125,000 upon the improvement of the grounds, and recently an additional appropriation of \$300,000 has been approved by the Legislature but has not thus far passed the Board of Estimate. With this fund it will be possible to render the Park one-third complete. Upon the whole, the city authorities have been very friendly towards this enterprise. The only difficulty has been the inadequate maintenance; only \$40,000 has been set aside for the year 1900, whereas the Park cannot be maintained for less than \$60,000 in its present state of development, and \$100,000 when it is completed. As the Park derives practically nothing from gate receipts and all revenue from privileges is devoted to the purchase of animals, it is entirely dependent upon the city for maintenance, while the Society agrees constantly to supply the animals and to proceed with the erection of buildings as fast as possible.

During the past year under the able direction of Mr. Hornaday the administration of the Park has been thoroughly systematized and the service is very economical

and effective. Three Assistant Curatorships have been established as follows:

J. Alden Loring, Mammals; C. W. Beebe, Birds; R. L. Ditmars, Reptiles. The Assistant Curators are energetic in their various branches and it is the intention of the Society, sooner or later, to promote them to curatorships with an increase of salary.

Great care has been exercised in the selection of animals. With the exception of a very few specimens all the animals in the Park were caught wild when young and these types are especially fine examples of their kind. The Buffalo range is supplied with 10 splendid bulls and cows from Kansas. Most of the ranges are also well supplied. On June 1st the Mammal collections of the Park were made up as follows:

	Species.	Specimens.
Primates	6	10
Carnivora	21	43
Ungulata	9	28
Rodentia	6	65
Edentata	1	1
Marsupialia	1	4
	<u>44</u>	<u>151</u>

On the same date the Reptilian collection consisted of the following:

	Species.	Specimens.
Crocodylia	1	18
Chelonia	22	85
Lacertilia	12	65
Ophidia, venomous	11	51
Ophidia, non-venomous	33	186
Amphibia	13	40
	<u>92</u>	<u>445</u>

The Bird installations are as yet far from complete; 44 species are represented by 185 specimens.

Chief attention has naturally been devoted chiefly to the raising of funds, to the work of construction and of planning the various installations, the establishment of the many new features which will characterize the future development of the Park. The endeavor throughout has been to do

everything in the best possible manner, carefully studying the best models in this country and Europe and attempting to advance upon anything that has been done hitherto. Thus the Park, although far from complete, in many respects marks a great step forward in zoological park development. Most of the animals enjoy an exceptional amount of freedom. The ranges in the smaller installations are numerous and as a rule the animals are in a splendid state of health. There have been relatively few losses. The rate of growth of the animals especially in the Reptile House and the Bear Dens and in the interior Flying Cage for Birds is rapid and there is every reason to believe that most of these animals are in a perfectly normal state.

Naturally the more purely scientific work in the Society must be deferred. The field of publication has hardly been entered upon. The admirable 'Guide' which was prepared by the Director is proving very popular and has met with large sales. Illustrated bulletins describing the development of the Park have appeared only at rare intervals but it is hoped to make them more regular next winter. Considerable progress has already been made in photography and many of the photographs of living animals are not only beautiful but possess considerable scientific value as presenting perfect representations of pure types of North American and exotic animals, seen to best advantage in their natural surroundings.

HENRY F. OSBORN.

*SIGMA XI, AT THE AMERICAN ASSOCIATION
FOR THE ADVANCEMENT OF SCIENCE.*

DURING the last meeting of the American Association for the Advancement of Science, at Columbus, Ohio, the convention of Sigma Xi was held with a very large attendance, and it was decided to have a reunion of such members of the Society as might attend the meetings of the American

Association at New York. It is planned, therefore, to hold a meeting at which all members of Sigma Xi are cordially invited to be present some evening during the meeting of the Association in New York. The date and hour of the meeting will be announced by posters and in the daily program.

The rapid rise of this Society in American universities is signified by the large number of young men prominent among the officers and participants in the various sections of the American Association. It was started in 1886, at Cornell University, by a few graduate students in engineering. At first the intention was to make it a purely engineering society, but soon after its organization the scope of the Society was broadened, so as to take in all the most promising men in the Senior classes giving special attention to any of the branches of science. In its extension to other institutions, it has become the representative honor-society for the ablest students of science in the institutions where it is established.

According to the constitution the object of the Society is to 'encourage original investigation in science, pure and applied.' In the report of the Committee on Extension, made at the convention of 1895, the following words express the purpose of the Society: "In establishing a new chapter * * * in each case we should make sure that we entrust the power of distributing the honor of membership only to such persons and institutions as are capable of giving the education and training necessary to the carrying on of scientific investigation; * * * we should also be well assured of the hearty co-operation of the scientific faculty in the establishment of the local chapter."

At present there are ten chapters connected with the following institutions, and the eleventh has already been voted, although not yet established: