

support the iron fence for the Beaver Pond. The Society is in urgent need of an antelope house and a monkey house, and it is hoped that these will come as gifts from individuals, as the provision hitherto made is for the accommodation of American quadrupeds and birds, and this will exhaust the \$106,000 at the disposal of the Society.

The most elaborate of the structures commenced is, by all odds, the Reptile House; this will have a length of 146 feet and a width of 100. It is being constructed of buff mottled brick, combined with granite and terra-cotta. It will be roofed with slate, heated by hot water, and its cost, with cages, will be about \$40,000. It is beautifully situated on the edge of a forest of great oaks, very near the geographical center of the park. Close to the southeastern corner of the building is a natural pool in a wide outcrop of granite rock, which will speedily be converted into a summer home for saurians.

It is hoped that the Reptile House can be completed by April, 1899, in time to receive its cages and collections for the opening of the park in May.

The Director has found it necessary to give a chapter 'concerning the purchase of wild animals,' which deserves to be widely read, since with the proper changes it may be made to apply to collectors in various branches of history. The gist of it is contained in the following paragraphs:

"Not unfrequently it happens that a hunter who captures an animal that to him is strange imagines that it is worth double its real value, and feels indignant when a zoological garden offers him what is really a fair price. In about nineteen cases out of every twenty the man who captures a wild animal thinks it is worth far more than it really is. For example, if we were to offer a farmer's boy \$2.50 for a wild goose that he had caught and cooped, the chances are he would be highly indignant; but at this moment we know of thirty-two wild geese for sale, property crated, at that price.

If we were asked to name the greatest small annoyance that comes in the daily mail of a zoological park we would reply: The letters which say, "What will you give me for it?" Very often not the slightest clue is given to the

size, age, sex or condition of the captive animal. All these are left to be divined by the man who is asked to submit an offer."

F. A. L.

THE STATISTICAL METHOD IN ZOOLOGY.

THE statistical method of biographical investigation has recently been used by Walter Garstang, the naturalist in charge of the fishery investigation of the Plymouth Laboratory, with great success. He claims that it is possible to identify the different schools of fish which approach the shore, even when these schools are made up of individuals which appear to be quite alike. He shows that the mackerel of the American coast are really different from the animals of the same name found along the European coast, and he further shows that the mackerel which frequent the shores of the British Isles may be sub-divided into two principal races, an Irish race and a race frequenting the English Channel and the North Sea. It thus seems that a species heretofore supposed to be widely distributed and given to migrating over long distances of the ocean is really cut up into a number of races, which probably do not intermingle and which may have very limited ranges. If it can be proved—and it now appears to be proved—that the local representatives of each species of animals are branded with indices of consanguinity, which indices may be detected through the plotting of curves of frequency, a new and most fascinating line of investigation is opened to the zoologist, the comparative anatomist and the student of geographical distribution.

H. C. B.

BOTANICAL NOTES.

A BOTANICAL ALMANAC.

A HANDY little book, bearing the title of 'Deutscher Botaniker-Kalender für 1899,' has been prepared by Paul Sydow, of Berlin. It is modeled after the well-known 'Chemiker Kalender' of Dr. Biedermann, which for twenty years has been well-nigh indispensable to the chemists and physicists. This botanical almanac includes a diary (in which notable events, as the births and deaths of great botanists, are recorded), a money table, tables of weights and

measures, the 'Berlin Rules,' catalogue of exsiccati, catalogues of botanic gardens, botanical museums, botanical collections and places where deposited. The publishers (Borntraeger, Berlin) have done their part well, both in printing and binding. The light-colored linen cover and its conventionalized water-lily ornamentation are in most excellent taste.

CHECK LIST OF FOREST TREES.

A VERY convenient, revised and condensed edition of Sudworth's 'Arborescent Flora of the United States' has recently been issued by the Division of Forestry, under the title 'Check List of the Forest Trees of the United States.' It makes use of the modern nomenclature, gives lists of common names, and includes notes as to the range of each species. The following corrections should be made in a later edition:

Pinus ponderosa scopulorum Engelm., add in Nebraska eastward along the Niobrara River to the 99th meridian, and to the 103d meridian on the North Platte and Lodge Pole Rivers.

Hicoria ovata (Mill.) Britt., change to southeastern instead of northeastern Nebraska.

Hicoria laciniosa (Michx. f.) Sarg., add southeastern Nebraska.

Hicoria alba (Linn.) Britt., add southeastern Nebraska.

Populus tremuloides Michx., change from southern to western Nebraska.

Quercus velutina Lam., add southeastern Nebraska.

Asimina triloba (Linn.) Dunal., add southeastern Nebraska.

Pyrus coronaria Linn. This species is recorded in local catalogues as occurring in eastern Nebraska, but it is *P. ioensis* (Wood) Bailey, if this is to be regarded as a distinct species.

Prunus demissa (Nutt.) Walp., add from central Nebraska westward.

Cercis canadensis Linn., add southeastern Nebraska.

Rhus copallina Linn., add southeastern Nebraska.

Acer saccharum Marsh., strike out eastern Nebraska, as this species does not occur in this region in the wild state, although freely planted.

Acer rubrum Linn., strike out eastern Nebraska, as this species does not occur in this region in the wild state, nor is it often planted.

Æsculus glabra Willd., add southeastern Nebraska.

This check list will render a good service not only to botany, but still more to forestry and horticulture, in giving currency to the revised nomenclature of our forest trees.

CRETACEOUS AND TERTIARY PLANTS.

F. H. KNOWLTON, phytopaleontologist of the United States Geological Survey, publishes, in Bulletin 152 of the Department of the Interior, a most valuable catalogue of the Cretaceous and Tertiary plants of North America. In Lesqueroux's catalogue of twenty years ago but seven hundred and six species were included, of which one hundred and fifty seven are from the Cretaceous, and five hundred and forty-nine from the Tertiary. In the list before us about twenty-five hundred species are included. The list is strictly alphabetical and is not divided so as to enable one to easily estimate the number from each period. The date and place of publication of each genus and species are given with much care. The modern nomenclature is used, even to trinomials and the double citation of authors. Much attention is given to synonymy, and to the citation of the more important references, especially to such as include descriptions and figures.

LEWIS AND CLARK'S PLANTS.

THOMAS MEEHAN was fortunate enough to discover, some time ago, in the custody of the American Philosophical Society, some packages of dried plants which, on examination, turn out to be the long-lost collection made by Lewis and Clark, in 1803 to 1806, during their expedition across the Western country from St. Louis to the mouth of the Columbia River. They were examined by Dr. B. L. Robinson and J. M. Greenman, of the Herbarium of Harvard University, and compared with Pursh's treatment of this collection, in his *Flora Americæ Septentrionalis* in 1814, and the results have been published in the Proceedings of the Academy of Sciences of Philadelphia (January, 1898). Mr. Meehan notes that 'this collection contains all but sixteen of Lewis's plants as described by Pursh in his Flora,' and of the missing numbers seven are represented in the herbarium of the Academy by authentic specimens from Lambert's herbarium. Mr. Meehan says further that 'only a few of these seven missing ones are of material importance,' and that 'for all practical purposes all the plants of Lewis and Clark's expedition are now deposited in the Academy.'

CHARLES E. BESSEY.

THE UNIVERSITY OF NEBRASKA.