

cilasso in respect to Guaxule that appears to fix this town, beyond any reasonable doubt, at the mound group near Cartersville, Bartow County, Georgia. The statement of this author is as follows: "La casa estava en un cerro alto, como de otras semejantes hemas dicho. Tenio toda ella el derredor un paseadero que podian pasearse por el seis hombres juntos." "The house [of the chief] stood on a high hill [mound] similar to others we have already mentioned. It had round about it a roadway on which six men might march abreast."

The 'similar to others we have already mentioned' is evidently intended to signify it was artificial, and this is admitted by all who allude to it. The statement that it was 'high' signifies more, in the eyes of the Spaniards, than an ordinary elevation. The large mound of the Etowah group near Cartersville, Bartow County, Georgia, is 66 feet high with base diameters of 380 and 330 feet, and top diameters about 160 and 180 feet. Running up the south side is a broad roadway varying in width from 37 to 56 feet. In bulk it is next in size to the great Cahokia mound near St. Louis. Here then we have a mound which will completely satisfy the description, and the only one in all that section of the south—as is now positively known—which will do so. Moreover, it is sufficiently near Canasauga River to agree with the narrative. There is no reason, therefore, except to maintain a theory, why this should not be accepted as the site of Guaxule. Assuming this as one fixed point, the possibilities of the position of Xuala become much more limited than without this determination.

As the suggestion above mentioned, that the Chalaque villages were near the Keowee River, may be accepted as probably correct, it is apparent from the limited time of the march from Xuala to Guaxule—five days—that we must place the former town somewhere in northeastern Georgia, probably in White or Hall County or in that section. A statement by Biedma appears to have a decided bearing on this question; it is as follows:

Again we took the direction of the north, and for eight days we traveled through a poor country, scarce of food, until arriving at one called Xuala,

where we still found some Indian houses, though a sparse population, for the country was broken. Among these ridges we discovered the source of the great river by which way we started, and which we believed to be the Espiritu Santo. We went on to a town called Guasuli, where the inhabitants gave us a number of dogs, and some maize, of which they had but little; whence we traveled four days and we arrived at a pueblo which was called Chiha, which possessed more food; this is situated on an island of this river of the Espiritu Santo, which from its source has large ones (islands).

That they struck the headwaters of Coosa River, which they thought was the Espiritu Santo (Mississippi), and that they followed it down to Chiaha seems evident, for the description of this river by Biedma in the foregoing citations fits no other river in this region than the Coosa.

This supposition is apparently confirmed by the earliest known map of De Soto's route, made before Tristan de Luna started on his expedition, given by Harris in his 'Discovery of North America.' In this a river is laid down about the same locality as the Coosa (and Etowah) running westward marked with islands and towns. It is continued westward, however, to the Mississippi and was evidently drawn to correspond with Biedma's statement, regardless of the fact that De Soto and his followers must have learned at length that it did not extend to the Mississippi. This fact, however, was overlooked by the map-maker.

CYRUS THOMAS,

J. N. B. HEWITT.

BOTANICAL NOTES.

THE STUDY OF PLANT MORPHOLOGY.

NEARLY twenty years ago Professors Arthur, Barnes and Coulter published a useful book on the morphology of plants under the title of 'Handbook of Plant Dissection.' It included suggestions for studies of a dozen representative plants selected from all parts of the vegetable kingdom. These authors finding themselves unable to undertake the re-writing of the book for a new edition delegated the task to a younger man, Professor O. W. Caldwell, who brings it out under the new title 'Handbook of Plant Morphology'

(Holt & Co.). The new book follows the old one in plan, and to a considerable extent in detail also. By abridgment of the suggestions to the student (an improvement over the old book) the author has been able to take up more than twice as many plants, thus enabling the teacher to make a better selection where it is not possible to study all of them. Two things are emphasized in the book, namely, that structures of plants are related and more or less perfectly adapted to the two primary functions of nutrition and reproduction, and that there has been a gradual evolution of plants in the vegetable kingdom. The purpose of this course in plant morphology is to give the pupil broader views of plants and their structure, and in this the author has succeeded very well. The book should find place in the better class of high schools.

There is only one serious criticism to be made on the book, and that is that in the glossary the suggestions as to the original meanings of the terms (given in parentheses) are often very misleading. In another edition these suggestions should be wholly omitted, or the roots from which the terms are derived should be inserted, as was done in the old book.

PLANTS OF THE BAHAMA ISLANDS.

THE vegetation of the Bahama Islands is lucidly sketched and discussed by Professor Doctor W. C. Coker in a recent paper published by the Geographical Society of Baltimore. A short history of the botanical explorations of the islands is given, followed by discussions of the composition and relationships and distribution of the Bahama flora. Annotated lists are given of the plants of economic importance, including trees and shrubs useful for their woods or leaves (20 species); medicinal plants (6 species); indigenous fruits (10 species); cultivated fruits (25 species); ornamental trees (10 species). Twenty-five to thirty pages are given to an ecological discussion of the vegetation on the different islands, followed by a systematic list of all the species collected, beginning with slime molds (11 species), and including algae (50 species), fungi (22 species), lichens (40

species), mosses and liverworts (16 species), ferns (14 species) and flowering plants (423 species)—in all 580 species. Sixteen full-page plates, including half-tone reproductions of thirty-one fine photographs, complete this instructive paper.

RECENT BOTANICAL PAPERS.

PROFESSOR DOCTOR ARTHUR finds (Bull. 103, Indiana Expt. Station) that smut may be destroyed in seed oats by the simple operation of sprinkling the seed with a solution of formalin of a strength of one pound of the formalin to fifty gallons of water, using enough water to make the oats moist enough 'to pack in the hand.' It is then to be shoveled into a pile and covered for two hours, when it is ready for sowing. If preferred it may be spread out and dried before sowing.—C. L. Shear discusses the fungous diseases of the cranberry (Farmers' Bull. 221, U. S. Dept. Agr.), namely, 'blast,' 'scald,' 'rot' and 'anthracnose.' It is shown that these diseases may be controlled by a proper application of Bordeaux mixture.—'The Shade Trees of Denver' (Bull. 96, Colorado Expt. Station), by Professors Paddock and Longyear, possesses more than local interest in that it records all the trees not natives of Colorado which are known to be growing in Denver. When it is remembered that the elevation of the city above sea level is exactly one mile, it is evident that the conditions are very different from those where these exotic trees originated. The growing of trees under such conditions becomes an interesting experiment in the acclimatization of plants.—The latest 'Contribution' from the Gray Herbarium of Harvard University (No. XXIX.) includes descriptions of new species of plants from the islands of Margarita and Coche, Venezuela, by Dr. B. L. Robinson. The announcement is made that Dr. Robinson has in preparation a flora of the islands.—The second part of Professor Gifford Pinchot's 'Primer of Forestry' has recently appeared as Part II. of Bull. 24 of the United States Bureau of Forestry. This part deals with the practise of forestry, with work in the woods, and with the relation of the forest to the weather and the streams, and concludes

with a short account of forestry at home and abroad. It is beautifully illustrated with half-tone reproductions of photographs. It will be very helpful to forestry students.

CHARLES E. BESSEY.

THE UNIVERSITY OF NEBRASKA.

THE HARVEY SOCIETY OF NEW YORK CITY.

A NEW society called the Harvey Society, consisting of laboratory workers in New York City, has recently been established under the patronage of the New York Academy of Medicine. Its purpose is the diffusion of scientific knowledge in selected chapters of anatomy, physiology, bacteriology, pathology, pharmacology and physiological and pathological chemistry, by means of public lectures by men who are workers in the subjects presented.

Each lecture is intended to represent the state of modern knowledge concerning the topic treated and at the same time will be adapted for presentation before an audience consisting of that portion of the general medical profession who are interested in the scientific side of medicine.

It is hoped that through these lectures the common interests of research workers and the medical profession may be profitably cultivated. The fulfilment of the purposes of the society has been entrusted to the hands of the following committee:

Graham Lusk, *president*,
Simon Flexner, *vice-president*,
George B. Wallace, *secretary*,
Frederic S. Lee, *treasurer*,
Christian A. Herter,
S. J. Meltzer,
E. K. Dunham.

The members of the society consist of two classes, active and associate members. Active members are laboratory workers in the medical sciences residing in New York. Associate members are such persons as may be in sympathy with the objects of the society and reside in New York.

The first course of lectures will be given on Saturday evenings during the winter of the years 1905-1906 at the Academy of Medicine.

SCIENTIFIC NOTES AND NEWS.

THE Royal Society elected, on May 11, the following new fellows: John George Adami, professor of pathology, Montreal; William Arthur Bone, lecturer on chemistry, Manchester; John Edward Campbell, mathematical lecturer, Oxford; William Henry Dines, meteorologist, London; Captain Arthur Mostyn Field, R.N., hydrographer of the Navy, London; Martin Onslow Forster, assistant professor of chemistry, Royal College of Science, London; Edwin S. Goodrich, demonstrator of anatomy, Oxford; Frederick Gowland Hopkins, reader in chemical physiology, Cambridge; George William Lamplugh, district geologist on the Geological Survey, Ireland; Ernest William MacBride, professor of zoology, Montreal; Francis Wall Oliver, professor of botany, University College, London; Lieutenant-Colonel David Prain, I.M.S., superintendent of Royal Botanic Gardens, Calcutta; George F. C. Searle, senior demonstrator in Cavendish Laboratory, Cambridge; Hon. Robert John Strutt, fellow of Trinity College, Cambridge; Edmund Taylor Whittaker, mathematical lecturer of Trinity College, Cambridge.

DR. FRANZ BOAS has resigned from the curatorship of the anthropological department of the American Museum of Natural History. He will continue his connection with the museum, conducting the researches and publications of the Jesup North Pacific Expedition and of the East Asiatic Committee.

DR. ALLAN McLAUGHLIN has been appointed head surgeon of the Marine Hospital at Naples, in the service of the United States.

PROFESSOR JAMES H. TUFTS, of the University of Chicago, was elected president of the Western Philosophical Association at the meeting held at the University of Nebraska on April 21 and 22.

SIR WILLIAM DE W. ABNEY, K.C.B., Mr. Shelford Bidwell, Lord Alverstone, Dr. Ludwig Mond, Lord Rosse, Sir Thomas H. Sanderson, Sir James Crichton-Browne (treasurer), and Sir William Crookes (hon. secretary), have been nominated as vice-presidents of the Royal Institution, London.