tion of the meeting, he had uncovered just outside the city thirty or forty Roman and Frankish burials, as well as the remains of an ancient Roman roadway. The skeletons and funerary objects were left in their original positions until after our visit, when they were removed—the skeletons to the Berlin Museum, and all other objects to the Paulus Museum in Worms. Excavations of a similar nature had also been carried on under Dr. Koehl's direction at three other localities. Near the West-end School in Worms, we were permitted to see burials of the Hallstatt epoch; while at Monsheim and Mölsheim, a few miles to the west of Worms, neolithic burials and dwelling sites, belonging to three different epochs, were exposed to our view. Here the pottery belongs to three distinct types, as set forth in Dr. Koehl's 'Festschrift' ('Die Bandkeramik der steinzeitlichen Gräberfelder und Wohnplätze in der Umgebungen von Worms'), as follows: (1) An early geometric pottery, the so-called Hinklestein type; (2) the Spiral-meander type, and (3) a later geometric pottery or Rössener type.

The next meeting of the association will be held in Greifswald, and is to include on its program an excursion to the museums of Stockholm.

GEORGE GRANT MACCURDY.
YALE UNIVERSITY MUSEUM,
October 28, 1903.

SCIENTIFIC BOOKS.

SMALL'S FLORA OF THE SOUTHEASTERN UNITED STATES.

Two works, each of them a masterpiece in its time, have given us our principal knowledge of the plants of the Southern United States. The first, 'Elliott's Sketch of the Botany of South Carolina and Georgia,' appeared in 1821 to 1824. The second, 'Chapman's Flora of the Southern States,' was first published in 1860, and was issued also in subsequent editions with new matter in the form of appendices. All botanists will welcome Dr. John K. Small's 'Flora of the Southeastern United States,' the new masterpiece of southern botany. The book contains 1,370 pages, besides twelve pages of introductory matter, and describes 6,364 species—another illustration of the fact that we are living in a time of men who do things. It is interesting to note in this connection that the author, after giving us in these 1,382 pages the result of ten years' persistent labor, required only a modest twenty-five lines of preface to tell how he did it. The work will be especially useful to botanists in Mississippi, Louisiana, Texas and Oklahoma because those districts have been only imperfectly covered by the preceding floras, which were based chiefly on material from the South Atlantic states. The new work does not, it is true, profess to contain more than the plants east of the one hundredth meridian, but in fact we do find in it such distinctly desert types as the ocotillo, *Fouquieria splendens,* and the creosote bush, *Covillea tridentata.*

The book follows the Engler and Prantl sequence, the American Association nomenclature and the metric system of measurement. It also gives family names throughout a termination in -aceae, a practise which has already been adopted in the publications from the United States National Herbarium and which, it is believed, will meet with general approval. The name Brassicaceae, for example, is a much more orderly, suitable and significant designation for the mustard family than the name Cruciferae, and it is only the greater familiarity with the latter name which leads many botanists still to cling to it.

It has come to be generally recognized in the last two decades that the generic grouping of species would be much more convenient and significant if the looser genera, containing diverse groups of species, which had been fashionable during the preceding half century, were divided into genera each of which represented an evident genetic community. A subdivision of these loose genera has been going on for several years past in America and in Germany. In Dr. Small's new book this tendency has been carried to an extreme to

which not all of us will be prepared to follow. Most botanists will approve the generic separation of the deerberries, represented by *Vaccinium stamineum,* from the blueberries, represented by the European *Vaccinium myrtillus* and its several American relatives, and many will prefer to join him in separating *Vaccinium erythrocarpon* as a generic type under the name *Hugeria,* but it is doubtful whether many will be willing to place the white pine in the genus *Strobus,* distinct from *Pinus,* or the nut pine of Arizona in still another genus, *Caryopitys.*

The book is not wholly without evidence of ill-considered conclusions, as may be illustrated by the genus *Ribes.* Pursh in 1814 described from the garden of Fraser, the English nurseryman, a *Ribes resinosum* which was alleged to have come from the mountains of eastern North America. The plant afterward was identified by several competent botanists with *Ribes orientale,* from the mountains of Asia Minor, and was accordingly dropped from the American flora. If the author has sufficient evidence to restore the plant to good standing as a native of the Southern United States, he does not adduce it in his book. The name *Ribes gracile* Michx. has been transferred from the plant with which it has been associated for a generation and applied to a plant to which on geographic grounds it could not possibly have applied, while for the plant we formerly knew as *gracilis* Nuttall's name *missouriense* has been taken up. It is more than doubtful whether changes based on such imperfect or incorrect information are advisable.

Most botanists will be slow in becoming convinced that the southern states contain 53 species of *Sisyrinchium* or 185 species of *Crataegus,* but it must be stated that the matter in both these genera was prepared by special contributors, not by Dr. Small himself.

The admirable keys with which the book is equipped throughout, a new feature in Southern floras, will greatly facilitate its use by students. This and the other timely and authoritative qualities of the work so greatly counterbalance any faults that may be charged against it that the book will necessarily take its place as the standard work on Southern botany.

Frederick V. Coville.

Ueber die Bedeutung des Darwin'schen Selectionsprincips und Probleme der Artbildung. By Dr. Ludwig Plate. Second edition. Leipzig, W. Engelmann. 1903. 8vo. Pp. viii + 247.

The mass of literature which has grown up around the doctrine of natural selection since it was first propounded has reached the proportions of a forest, so dense that one may well shrink from the task of penetrating its depths or of keeping pace with its rapid growth. Numerous sturdy trees, well repaying a close acquaintance, occur, but they are apt to be hidden from view by the peculiarly dense and luxuriant undergrowth which characterizes the forest.

The importance of the subject is too great, however, to permit its neglect merely on account of difficulties in the way, and the student of the theory of descent will be grateful to Dr. Ludwig Plate for a careful and critical review of the literature bearing on the theory of natural selection, which has appeared during the last twenty years.

Dr. Plate's essay was first published some four years ago in the 'Verhandlungen der deutschen Zoologischen Gesellschaft' and is now republished in a somewhat enlarged form under the title given above. It is a concise yet clear exposition of the arguments that have been advanced in opposition to the theory of natural selection and of the principles which have been suggested as accessories in the transmutation of species, and with the exposition there goes keen criticism backed by a wealth of illustration, in itself of the greatest interest and evidencing in the author unusual powers of observation and aptness in application. A further chapter deals with the postulates of the doctrine of natural selection, such as an excessive birth rate, variability and isolation, and a concluding one considers the significance and limitations of the Darwinian and Lamarckian factors, especially with regard to adaptation.

That the work is of merit is abundantly shown by its appearance in a second edition

so soon after its original publication, both as a separate volume and as a contribution to the proceedings of a learned society. It is not merely an exposition of conflicting views; it is a decided contribution to the theory of descent, a perusal of which is rendered both interesting and in a high degree instructive by a notable clearness of statement and a judicious and intelligent arrangement of topics. Every student of the theory of descent will find it of great value, and an English translation, which might render it available for the wide circle of those interested in the present position of the theory of natural selection, is highly desirable.

It may with propriety be added that the book is furnished with an excellent author and subject index and contains a bibliography consisting of over two hundred and sixty references. J. P. McM.

SCIENTIFIC JOURNALS AND ARTICLES.

THE longer articles of the September and October numbers of the *Botanical Gazette* are all ecological. They contain the first half of a long contribution to the ecological plant geography of the province of New Brunswick by Professor W. F. Ganong, of Smith College, entitled 'The Vegetation of the Bay of Fundy Salt and Diked Marshes.' The first instalment discusses the distribution and extent of the marshes (with maps); their geological origin and mode of formation; the economics of the marshes, including crops, prices and mode of reclamation; factors determining the ecological features of the marsh vegetation, including a discussion of the relations of water, temperature, light, soil and animals; and after summarizing the ecological factors the author enters upon a consideration of the vegetation of the marshland.—Mr. G. H. Shull, of the University of Chicago, gives a thorough account of 'The geographic distribution of *Isoetes saccharata*,' a plant limited to the fresh-water portions of Chesapeake Bay and its tributaries. After listing and mapping the known stations of this plant, the author discusses the causes to which its restricted distribution is due. He considers it autochthonous in Chesapeake Bay and the parent of *Isoetes riparia*, its present distribution being explained by the geomorphic movements of the coastal plain.—Mr. S. B. Parish, of San Bernardino, presents 'A Sketch of the Flora of Southern California.' After an extended statement of the orographical features of the region, the deserts, the drainage system, the geological formations and the climate, he describes the phytogeographic areas and discusses the flora peculiar to each. The interrelations of the different life areas, the physiognomic characteristics of the flora, the distribution of the plants, the statistics of classification and the affinities of the flora are successively presented. The paper closes with a comparison of the flora of southern California with that of various other regions east and west, and with a few words on the cryptogamic flora, which has yet been imperfectly explored.—In the October number Professor John W. Harshberger, of the University of Pennsylvania, presents the first part of 'An Ecological Study of the Flora of Mountainous North Carolina.' The topography, drainage, physiography and geology of the region are described, and also the effect of the physiographic changes upon the distribution of plants. After discussing the phenological distribution of plants the author takes up the influence of glaciers upon the flora of North Carolina and the principles underlying the distribution of plants in eastern America, closing this portion with a consideration of the effect of edaphic factors.—The 'Briefer Articles' are more varied. In the September number Professor Charles Thom describes a gall produced by insect larvæ upon a delicate mushroom, *Omphalia campanella*, a phenomenon which has not been previously reported.—Professor W. C. Coker, of the University of North Carolina, shows that the usual absence of dorsal air chambers in the genus *Dumortiera* is dependent upon its semi-aquatic habits, and that it has evidently been derived from forms possessing such structures. He also gives a drawing showing the origin of the branched cells ramifying in the Nostoc-chambers of *Blasia pusilla*. In the sporangium of *Sphærocarpus terrestris* he finds round sterile cells, probably the homo-