citation of such consistent historical thoroughness that his oldest references generally fall on the oldest and best known species of each genus. The indications are that he did not, but often gave citations to old books under relatively little known species which were not well represented in the writings of his more immediate predecessors.

If this should prove to be the case we would save names as well as labor by beginning our historical investigations with Tournefort, who was generally careful to place the most common and best known species at the head of his list. Moreover, such a limitation would enable us to frame a rule of much more direct and easy application, for instead of being obliged to compare the chronology of the Linnæan species of a genus we could simply look for its type where the name first appeared in Tournefort's 'Institutiones,' or some later work. If it were found that this species had been included as a binomial in the 'Species Plantarum,' or wherever the generic name was first used by a binomial author, this would constitute the adoption of the pre-Linnæan genus, and its type species would have been determined historically, but still in an entirely definite and invariable manner. Such a rule might read something as follows:

A genus is treated as having been adopted from Tournefort or a later nonbinomial writer when its type species was included under the first binomial use of the name.

This rule would have the further distinct advantage that generic names borrowed by Linnæus from older literature, but applied to new groups of plants, would not be disturbed, since their pre-Linnæan types would not be found under the Linnæan use of the name, which would then be treated as though it had originated with Linnæus or any later botanist. Generic names, like those of species, would have a definite order of priority under the binomial system of nomenclature. All the real advantages of beginning generic nomenclature with Tournefort would be secured, without the folly of resurrecting the many generic names which did not come into use under the binomial system, but have rested in oblivion for a century and a half.

It has seemed desirable to call attention to this alternative suggestion at the present time because its merits can be most readily and satisfactorily investigated while botanists are testing the recently proposed rule to select types of Linnæan genera on the basis of the oldest reference.

O. F. Cook.

Washington,
February 3, 1903.

A GRANT FROM THE CARNEGIE INSTITUTION FOR PALEOBOTANY.

The executive committee of the Carnegie Institution has approved a grant of $1,500 to G. R. Wieland, of the Yale University Museum, for the continuation during the year 1903 of his researches on the structure of the living and fossil cycads. In connection with this announcement the following brief statement is appended concerning the extent and progress of cycad investigation:

The cycadaceous nature of certain silicified stems with leaves and fruits unknown, from the English Wealden, was recognized as early as 1825. Nearly fifty years later Carruthers studied a similar remarkably preserved trunk from the Lower Greensand of the Isle of Wight, in which he discovered between the old leaf bases, which were thickly covered by ramental hairs like those of ferns, wonderfully preserved and nearly mature ovulate strobili of entirely different structure from those of any cycads known.

About this same time Williamson described certain cycadean leaf imprints as found associated with trunks and various casts of fruits of puzzling character from the cliffs of Hawkser and Runswick on the south coast of England. Nevertheless, these plants remained one of the most interesting of all paleobotanical riddles for the next thirty years, our knowledge of them being confined to their trunk structure and the ovulate strobilus, though it should be mentioned that Capellini and Solms found pollen grains in an imperfectly preserved fruit borne on a trunk found at the ancient Etruscan Necropolis of Marzabotto, thus showing that whatever the character of the male fructification, it must have been borne laterally like the seed-bearing cones.

Although handsome specimens of these cycad, or Bennettitalean trunks were found in this country between Baltimore and Washington as early as 1851, they were not observed to present any new structural details, and remained, as in Europe, among the rarest of fossils until the discovery in quick succession some ten years ago of numerous additional Maryland specimens, and the first of the highly important new localities in the Black Hills and Wyoming. At this time superb trunks from the Black Hills were obtained by the Smithsonian Institution, while still others of importance were collected by Professor Macbride, of the Museum of the State University of Iowa. In the meantime Professor Marsh became deeply interested, and with remarkable foresight and success secured for the Museum of Yale University the most extensive and valuable of all cycad collections. Yet another interesting series of trunks is that from central Wyoming belonging to the State University at Laramie.

The macroscopic study of the American material has been carried on by Professor Lester F. Ward, and its structural investigation by the writer.

The preliminary studies of the latter thus far published include in part the discovery of the leaves with their structure and prefoliation, additional facts concerning ovulate fructification, and, of most importance, the form, prefloration and principal structures of the bisporangiate strobili. These, like the ovulate cones, owe their marvelously perfect preservation, in large measure, to their protected position among the old leaf bases. They are found unexpanded, but quite mature and complete in every detail. Moreover, the features present indicate with exactness the appearance that must have been presented in life by the strikingly handsome expanded flower or strobilus, which was in some species nearly, or even one foot in diameter.

The microsporophylls, or staminate fronds, bear pollen in sori of a structure identically comparable with those of the tree ferns of the genus *Marattia,* and are the first of their type yet discovered. Their interest from an evolutionary point of view is, therefore, very great, furnishing as they do the most direct evidence yet brought to light of the derivation of the Gymnosperms from ancient Marattiacean Pteridophytes bearing asexual spores. But, at the same time, the plan and other characters of the entire strobilus suggest much as to the possible manner and method of the evolution of the Angiosperms. In addition, these studies have already brought about a better understanding of the true character of various related but hitherto problematical fossil casts and impressions.

G. R. WIELAND.

YALE UNIVERSITY MUSEUM,
February 5, 1903.

CURRENT NOTES ON METEOROLOGY.

SCIENTIFIC INVESTIGATIONS BY WEATHER BUREAU MEN.

ONE of the most noticeable, and one of the most satisfactory, signs of the development of the United States Weather Bureau is the steady increase in the amount, and the no less steady improvement in the quality, of the original scientific investigations carried on by the rank and file of the Weather Bureau officials and observers. This encouraging advance is due largely to the energy and enthusiasm of the present Chief of the Weather Bureau, and of the more prominent officials of the service, notably Professors Abbe, Bigelow, Marvin, Henry and others. The two annual 'Conventions of Weather Bureau Officials' have doubtless also helped much towards this same end, for at these meetings there is opportunity for the reading of papers, for discussions, and for the promotion of a feeling of fellowship and of a spirit of scientific ambition which are most desirable. The *Proceedings* of the second annual convention of the officials of the Weather Bureau (Bulletin No. 31) is a volume containing a large amount of information of interest to every one who is working along meteorological lines, but the most striking feature of it, in the mind of the present writer, is the evidence it gives of original investigations carried on by Weather Bureau men. Space forbids any attempt at a review of this 'Bulletin.' Indeed, a mere enumeration of the titles of the papers read