Aristida lanosa. Collected near Medford, N. J., September 15, 1901, by W. Stone.

Sporobolus asper. Found in considerable abundance near the Bay shore above Cape May Point, by W. Stone, September 15, 1906.

Cyperus pseudovegetus. Collected near Swedesboro by Charles D. Lippincott, September 16, 1894.

Eleocharis ochreata. Discovered by S. S. Van Pelt at Cape May Point, September, 1905, and again observed the present year.

Rynchospora oligantha. Found near Speedwell, Burlington County, by S. S. Van Pelt, in July, 1906.

Specimens of all the above are in my own herbarium or in that of the Philadelphia Botanical Club.

WITMER STONE.

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF THE CLUB

DECEMBER 11, 1906

The meeting was called to order at 8:15 P. M., at the American Museum of Natural History, with President Rusby in the chair. Eight persons were present.

The reading and approval of the minutes for November 28 were followed by the nomination of Mr. Richard Schneider, of the New York Botanical Garden, for membership.

A communication, dated December 7, 1906, from the New York Academy of Sciences was read, formally inviting the Torrey Botanical Club "to send a delegate to the regular meeting of the Council on January 7, 1907," and enclosing "the amendments of the Constitution of the New York Academy of Sciences, which concern this matter and which have been drawn up according to the terms of agreement."

The amendments are as follows:

Article IV. First sentence to read: "The officers of the Academy shall be a President, as many Vice-Presidents as there

are Sections of the Academy, a Corresponding Secretary, a Recording Secretary, a Treasurer, a Librarian, an Editor, six *elected* Councillors, *and one additional Councillor for each allied society or association.*"

Article VI. A new article to be inserted as "Article VI," to read as follows:

"Societies organized for the study of any branch of science may become allied with the New York Academy of Sciences by consent of the Council. Members of allied societies may become active members of the Academy by paying the Academy's annual fee, but as members of an allied society they shall be associate members of the Academy with the rights and privileges of other associate members except the receipt of its publications. Each allied society shall have the right to delegate one of its members who is also an active member of the Academy, to the Council of the Academy, and such delegate shall have all the rights and privileges of other Councillors."

On motion it was voted unanimously that the President of the Club act as such delegate. The proposed amendment to Article XIV of the Constitution of the Club, which was laid on the table at the last meeting, came up for consideration. After discussion, a motion to adopt the amendment was unanimously carried.

The amendment reads as follows:

"Each active member, upon his election, and annually at the beginning of each fiscal year thereafter, shall pay to the treasurer the sum of five dollars. The payment of the annual dues shall entitle each active member to receive all publications of the Club issued during the year."

Letters of resignation were read from Mrs. Ida Clendenin Atchison, and from Miss Marianna Shutes.

On motion the secretary cast the vote of the Club electing Mr. Schneider to membership.

The scientific program was as follows:

"Some Hawthorns of the Vicinity of New York City," by Mr. W. W. Eggleston. Species and variations of *Crataegus* growing within the vicinity of New York City were described and illustrated by herbarium specimens.

"Centers of Distribution of Coastal Plain Plants," by Roland M. Harper.

One of the most familiar phenomena of plant distribution is that neighboring areas of equal extent often differ considerably in the number of species they contain. And it usually happens that a region with a rich flora (if a large enough area be taken into consideration) contains a considerable number of endemic species, also that many species which are not endemic grow more abundantly or vigorously in such places than in other parts of their ranges.

A well-known example of a center of distribution is the southern Appalachian region, which has the greatest variety of trees to be found anywhere in temperate eastern North America, most of which grow larger there than anywhere else; and many species are now confined to that region, though some of them were doubtless more widely distributed in prehistoric times. Isolated islands and mountain peaks in all parts of the world are also noted for their endemic species.

Our Atlantic coastal plain (shown on map which was exhibited), though in some respects a unit, contains several pretty well defined centers of distribution. Beginning at the northern end, the first center to be considered is the so-called "pine-barrens" of New Jersey. From the available literature it would seem that the following species are either confined to that region or else are much commoner in New Jersey than in adjoining states:

Schizaea pusilla, Sporobolus compressus, Dichromena colorata, Rynchospora pallida, R. Knieskernii, R. Torreyana, Xyris fimbriata, X. flexuosa (*torta* of most authors), *Eriocaulon Parkeri, Juncus caesariensis, Abama americana, Helonias bullata, Xerophyllum asphodeloides, Oceanoros leimanthoides, Tofieldia racemosa, Uvularia sessilifolia nitida, Aletris aurea, Lophiola aurea, Gyrotheca tinctoria, Pogonia divaricata, Arenaria caroliniana, Drosera filiformis, Corema Conradii, Ilex glabra, Hypericum adpressum, Rhexia aristosa, Dendrium buxifolium, Pyxidanthera barbulata, Gentiana Porphyrio, Sclerolepis uniflora, Chrysopsis falcata, Coreopsis rosea.*

Most of these are monocotyledons, and there are more species of Melanthaceae in the list than of any other one family.

The next well-marked coastal plain center seems to be in the southern corner of North Carolina. The following species are rarely, if ever, seen more than 100 miles from Wilmington :

Tofieldia glabra, Hypoxis micrantha, Dionaea muscipula, Kalmia cuneata, Coreopsis falcata, Leptopoda Curtisii.

The following species of wider distribution seem to be more abundant within about 50 miles of Wilmington than they are at a distance of 100 to 200 miles in either direction :

Selaginella acanthonota, Pinus palustris, P. serotina, Aristida stricta, Campulosus aromaticus, Dichromena latifolia, Zygadenus glaberrimus, Lilium Catesbaei, Smilax laurifolia, Habenaria blephariglottis, Nymphaea sagittifolia, Amorpha herbacea, Polygala lutea, P. ramosa, Gordonia Lasianthus, Cyrilla racemiflora, Clethra alnifolia, Vaccinium crassifolium, Sabbatia lanceolata, Carphephorus bellidifolius, Aster squarrosus, Marshallia graminifolia.

By far the greatest center of pine-barren plants, or perhaps an aggregation of two or more subcenters, is in Georgia and northern Florida. Probably $\frac{3}{4}$ if not $\frac{9}{10}$ of all pine-barren species can be found in Georgia ; at least a dozen are confined to that state and many more to Georgia and Florida together. In the Altamaha Grit region (the middle third of the coastal plain) of Georgia there are nearly 150 species on sand-hills, about the same in dry pine-barrens, 200 in moist pine-barrens, and 75 in pine-barren ponds. These numbers are undoubtedly larger than for the same habitats in any other state unless it be Florida.

In subtropical Florida there are of course many plants not found farther north, but practically all of these center in the tropics and therefore outside of the region under consideration.

Going westward from Florida we find in the vicinity of Mobile and Pensacola a center comparable with that in southern North Carolina. To this belong *Myrica inodora, Sarracenia Drummondii, Drosera filiformis Tracyi, Pitcheria galactioides,* and perhaps *Carphephorus Pseudo-Liatris. Chamaecyparis thyoides* and *Sarracenia purpurea,* which are as common within 50 miles of Mobile Bay as they are in New England, seem to be entirely wanting at twice that distance, and do not appear again within two or three hundred miles, as far as known.

Pine-barrens extend as far west as Texas, and there ought to be some species of pine-barren plants confined to Louisiana and Texas, but too little is known of the flora of those parts as yet.

Plants of muddy swamps seem from all accounts to be most numerous in the Mississippi embayment of the coastal plain, from about the mouth of the Ohio River southward. Characteristic species of this region, most of them woody plants, are:

Taxodium distichum, Echinodorus radicans, Arundinaria macrosperma, Hymenocallis occidentalis, Leitneria floridana, Hicoria Pecan, H. aquatica, Quercus Michauxii, Q. lyrata, Planera aquatica, Celtis occidentalis, Brunnichia cirrhosa, Platanus occidentalis, Crataegus viridis, C. apiifolia, Amorpha fruticosa, Ilex decidua, Acer saccharinum (dasycarpum), Berchemia scandens, Nyssa uniflora, Bumelia lycioides, Adelia acuminata, Trachelospermum difforme, Asclepias perennis, Gonolobus laevis, Vincetoxicum gonocarpos, Bignonia crucigera, Tecoma radicans, Conoclinium coelestinum, Mikania scandens, Eupatorium serotinum.

Most of these are not wholly confined to the coastal plain, but they are more common there than elsewhere, and few if any of them ever ascend more than 1,000 feet above sea-level. Going eastward in the coastal plain they become perceptibly scarcer. There are fewer of them in Georgia than in Alabama, still fewer in the Carolinas, and only about half of them reach Virginia, though there is nothing in the climate to hinder them, as far as known.

In contrast to these five or six evident centers a few of the regions with poorer flora may be mentioned.

The coastal plain of Delaware, Maryland and Virginia seems to lack many of the species common to New Jersey and the southern pine-barrens, though some of them will probably be reported when those parts are better explored. South Carolina, too, seems to be a rather uninteresting state floristically, and there are perhaps no good species confined to it. The upper fourth of the coastal plain of Georgia (*i. e.*, the part outside of the pine-barrens) has quite a diversified topography and vegetation, but practically all the plants growing there range either northward to the mountains or coastward to the pine-barrens.

A part of the Cretaceous and Eocene regions of the coastal plain from western Alabama through northern Mississippi and West Tennessee to Kentucky is remarkable for the paucity of its flora. It is entirely outside of the pine-barrens, and nearly all of its species seem to be common and widely distributed. The same remarks will probably apply to the coastal plain of Arkansas.

The ultimate reason why so many species are found in some parts of the coastal plain and so few in others is still obscure, and perhaps each center will require a different explanation. But the importance of locating these centers is obvious; for any one who wishes merely to collect as many species as possible will save time by confining his operations to the vicinity of known centers, and the possibilities of discovering new species are greater there than in the poorer regions. When the species belonging to each center are more accurately listed, it may then be possible to discover their significance.

Adjournment was at ten o'clock.

C. Stuart Gager,
Secretary.

December 26, 1906

The regular afternoon meeting of December 26 was omitted, and in the evening a reception was given in Schermerhorn Hall, Columbia University, to visiting botanists in attendance upon the meeting of the American Association for the Advancement of Science.

Six hundred and thirty-one invitations were issued. Notes of regret were received from 169 and acceptances from 95. These notes are preserved in the files of the secretary. About one hundred and twenty-five persons were in attendance, including local members. Refreshments were served by Mazetti, of 103 West 49th St.

The evening passed quickly and pleasantly, and the reception was a most enjoyable affair to all present.

The committee of arrangements, appointed at the meeting of the Club on October 31, consisted of Professor L. M. Underwood (Chairman), President H. H. Rusby, Mrs. E. G. Britton, Dr. H. M. Richards, and Dr. C. Stuart Gager. The expenses were borne

by voluntary contributions from members of the Club. Details are included in the report of the committee.

C. STUART GAGER,
Secretary.

JANUARY 8, 1907

The annual meeting was called to order at 8:30 P. M., with Vice-president Burgess in the chair. Eight members were present.

In the absence of the recording secretary, Dr. Barnhart was elected secretary *pro tem.*

The minutes of the meeting of December 11, 1906, were read and approved.

Resignations of two members, Miss Rosina Rennert, of 366 West 120th St., and Mrs. Robert T. Morris, of 152 West 57th St., were presented and accepted.

The annual report of the treasurer was read and on motion was received and referred to the auditing committee.

In accordance with a recommendation accompanying the report of the treasurer, it was voted that a committee be appointed to report at a subsequent meeting upon the status of the membership of the Club. The treasurer and the editor were constituted a committee for this purpose.

The editor presented a verbal report. The *Bulletin* and TORREYA have appeared as usual during the year, and the usual amounts have been expended upon them. Of the *Memoirs*, Vol. 13, and Vol. 12, No. 2, have been issued, upon such terms that the actual expense to the Club has been an inconsiderable one. The report was accepted.

There were no reports from the secretaries and none from the field committee.

Dr. Britton reported verbally for the standing committee on the local flora, urging the desirability of systematic work with a view to the publication of the results, and emphasizing the need of some competent person willing to undertake the direction of such work.

The annual election resulted as follows: president, H. H. Rusby; vice-presidents, E. S. Burgess and L. M. Underwood; corresponding secretary, J. K. Small; recording secretary, C.

S. Gager; treasurer, C. C. Curtis: editor, J. H. Barnhart; associate editors, Philip Dowell, A. W. Evans, T. E. Hazen, M. A. Howe, W. A. Murrill, H. M. Richards, A. M. Vail.

A proposed constitutional amendment was submitted by Dr. Barnhart, as follows:

"Originally, the Torrey Botanical Club had a single editor. In the revised constitution, adopted January 11, 1882, an assoate editor was added to the list of officers. By an amendment adopted December 14, 1886, the constitution was altered to read 'associate editors, not to exceed five in number,' and by a further amendment (adopted January 26, 1898) the word five was changed to 'seven.' The constitution in its present form, therefore, reads: 'associate editors, not to exceed seven in number.'"

The proposition hereby submitted is, that Section III of the constitution be amended by the substitution of the word "eight" for the word "seven," so as to read, "associate editors, not to exceed eight in number."

Upon motion, the meeting then adjourned.

JOHN HENDLEY BARNHART,
Secretary pro tem.

NEWS ITEMS

The University of Michigan has come into the possession of a tract of land of about thirty acres, which, it is expected, will be developed as a botanical garden.

Members of the Torrey Botanical Club will be pleased to learn of the promotion of their fellow-member, Dr. Alexander W. Evans, to the Eaton professorship of botany in the Sheffield Scientific School of Yale University.

Miss Clara Eaton Cummings, Hunnewell professor of cryptogamic botany in Wellesley College, died in Concord, N. H., on December 28. Miss Cummings was well known to the botanical world through her systematic studies of the lichens.

We learn from *Science* that Professor William Trelease, director of the Missouri Botanical Garden, left St. Louis on January 24 for an expedition to the West Indies, which is expected to last about two months.