Dr. A. S. Eakle presented 'Notes on Some Rocks from the Fiji Islands.' The collection, which included both igneous and sedimentary rocks from about twenty of the smaller volcanic islands, was made by Mr. Alexander Agassiz during his recent studies in that region. The specimens of eruptive rocks were found to include hornblende andesites, augite andesites, hypersthene andesites and basalts.

J. M. Boutwell,
Recording Secretary.

TORREY BOTANICAL CLUB, JANUARY 25, 1899.

Dr. N. L. Britton presented a report on the progress of the New York Botanical Garden, with exhibition of photographs. Dr. Britton said that during 1898 the species cultivated in the Garden at Bronx Park have reached 2,110, a gain of 700 on the previous year. The fruticetum, on the plain northeast of the Museum building, was begun in October, and now includes 195 species. The arboretum has been increased to 178 species, including those native to the tract. A viticetum is in preparation, to be planted next spring, including rock-ledges, and a rustic arbor about 600 feet long, now nearly completed. An additional nursery space near the southern corner of the tract was prepared in the spring, and planted partly with Siberian cuttings. Border screens are now planted around the entire tract except to the south. A complete record of all plants grown is kept by means of a card catalogue. From every plant which flowers on the ground an herbarium specimen is made; and these are classified in a special herbarium, useful already in satisfying inquiries. The use of the greenhouse on the Columbia University grounds at Morningside Heights was granted in 1896, and is still very important to the Garden. This is the old greenhouse built in 1857 by Mr. S. Henshaw for the Bloomingdale Asylum, and is one of the oldest greenhouses still standing in the United States.

Progress on the Museum building has been active, and it is thought it will be ready for occupation by midsummer. The Power House is nearly ready to put into operation. A subway from this to the Museum is under construction. A stable, toolhouse, etc., have been finished. The range of horticultural houses is planned to contain 13 houses; the contract for 7 of these has been signed, and ground was formally broken for them on January 3, 1899. Important work has been done toward improving the drainage of the Herbaceous Grounds, and a great deal of grading, and the terraces about the Museum have been begun. The Lorillard Mansion is now used as a police station-house, occupied by more than 65 officers, making a new and wholesome water-supply necessary. This has now been finished.

The Hemlock Forest remains in healthy condition; only three trees have died in the last three years.

The Museum is planned to provide in the basement a lecture-room seating 900; on the first floor a collection of plant-products, with models and photographs; on the second, a scientific collection for expert use, including a mounted collection of the local flora on swinging panels; followed by herbarium and laboratories on the top floor.

The herbarium already includes 30,000 specimens. Through the liberality of Mr. Cornelius Vanderbilt, Mr. and Mrs. Heller are now making collections in Porto Rico. Messrs. P. A. Rydberg and Ernest Bessey made collections in 1897 in Montana, through the liberality of Mr. W. E. Dodge. The results will soon appear as a Flora of Montana, forming the first volume of the Memoirs of the New York Botanical Garden.

E. S. Burgess,
Secretary.

DISCUSSION AND CORRESPONDENCE.

SOME SUGGESTIONS FOR SCIENTIFIC SEMINARS AND CONFERENCES.

To the Editor of Science: I feel that an experience of several years as a respectful and regular listener to scientific papers by young and old students, at college seminars or conferences, and at annual or periodic meetings of societies, gives me the basis for certain generalizations, without leaving me open to the criticism of judging from insufficient data.

The principal generalization I should like to offer is to the effect that our scientific students in colleges and professional schools do not re-

ceive sufficient training in the public presentation of their ideas, whether those ideas be original or borrowed. Most advanced scientific students in our colleges are obliged to attend and take part in seminars or conferences, at which their colleagues and teachers are supposed to criticise any scientific papers that may be presented. So far as my experience goes, the criticism is apt to be almost wholly as to scientific accuracy, with but little thought of several other points that are of vital importance. I fear teachers and professors are too apt to tolerate poor order, poor English and a 'dead-and-alive' manner of speaking, thinking the unfortunate beginner will gain wisdom by experience.

Judging from my own experience and the comments of others, I would say that our scientific workers often fail to carry their point and to win public sympathy for their work and cause because in their public utterances they do not follow rational lines of procedure. They are very apt: (1) to present an unorganized and apparently unrelated series of facts—their plan is rambling; (2) not to choose and emphasize the important points, probably because of lack of training in measuring the comparative worth of facts; (3) to use poor and inexcusable English; (4) to speak in a dazed sort of way, as though they themselves were not thoroughly convinced, as yet, of the truth of their results; (5) not to address the audience, a map or a blackboard under their influence being as inspiring as the audience, and much less embarrassing; (6) not to divide their time so as to complete their presentation within reasonable limits, thus causing weariness and restlessness on part of audience; (7) not to make good use of illustrative material in the way of maps, diagrams, specimens, lantern slides, etc.

Now the remedy for these serious failures that few men can outgrow seems to me to be largely in the hands of our college and scientific school teachers, and I would like to see a plan adopted in college seminars that would not allow a student to appear before his colleagues and masters until his plan of procedure had been censored, along the lines I have suggested, by some one of experience in public utterance.

The student should also receive criticism after his paper, so as to bring out the weak points in his argument or manner, thus minimizing the possibility of an equal failure at his next appearance. Such criticism does not kill individuality, but strengthens it, and certainly gives the student a greater confidence in and respect for his teachers. Should our colleges and scientific schools uniformly adopt such a method of training, our scientific gatherings ten years hence would not be so largely composed of specialists and those who attend from duty and with considerable sacrifice. It would also be much easier to secure public support for scientific work were more of our leaders able to win the interest of the public, without becoming merely 'popular lecturers,' by whom scientific accuracy is apt to be sacrificed for the sake of impressiveness.

Such work as I have suggested for our teachers takes much time and energy and seems at first not to pay; but immediate returns are not always the best, and there is no work on the part of a teacher that can give greater satisfaction in the long run than that which has helped beginners to make the most of their latent powers.

RICHARD E. DODGE.

TEACHERS COLLEGE,
COLUMBIA UNIVERSITY.

A REMARKABLE SUN-DOG.

THE appended diagram is an attempt to record the appearance presented by a rare and remarkable 'sun-dog' seen at Hamline, Minnesota, at 9:50 a. m., on February 10th. It was a very