of the Marsh apparatus, slightly modified for greater convenience. The original apparatus is described in the February number of the *Journal of the American Chemical Society*. By means of an improved method of distillation and concentration, and this apparatus, Bishop detected one part of arsenic in a billion parts of sulphuric acid.

C. E. Waters,
Secretary.

THE VERMONT BOTANICAL CLUB.

The eleventh annual meeting of the Vermont Botanical Club was held at the University of Vermont, January 17 and 18. Some twenty papers were presented, including 'Recollections of the Botanical Work of Joseph Torrey,' by Miss Mary Torrey; 'The Thorn-apples of Vermont,' by W. W. Eggleston; 'The Flora of Hawaii,' by Professor G. H. Perkins; 'The Finding of *Aspidium Filix-Mas* in Vermont,' by Miss N. Darling; 'Reminiscences,' by Cyrus G. Pringle; 'Variations Among Violets,' by Ezra Brainerd.

It was decided to begin the publication of an annual bulletin of which the first number will appear this spring. The next field meeting will occur about July first on Mt. Mansfield; the next annual winter meeting at St. Johnsbury. The officers were reelected as follows:

President—Ezra Brainerd, Middlebury College.
Vice-President—C. G. Pringle, University of Vermont.
Secretary—L. R. Jones, University of Vermont.
Treasurer—Mrs. N. F. Flynn, Burlington.
Executive Committee—Dr. H. H. Swift, Mrs. E. B. Davenport, Miss I. M. Paddock.

L. R. Jones,
Secretary.

DISCUSSION AND CORRESPONDENCE.

EYE ANOMALIES.

I have recently found that my eyes are abnormal in a way which is quite new to me, and which seems to be outside of the usual group of symptoms utilized by the physicians. The effect is interesting and I venture to ask whether any reader of Science can enlighten me. Both eyes are near-sighted but free from astigmatism.

1. In the first place I see double images with each eye. A black circle, about four centimeters in diameter, regarded from a distance of six meters with one eye, appears as two circles with their centers on a line about 45 degrees to the horizontal, intersecting so that the center of one lies nearly on the circumference of the other. The images are about equally strong, naturally quite black where they intersect and there seems to be a dot at the center of each. There is some vague color. With the left eye there is a tendency to repeat this phenomenon symmetrically; *i. e.*, the circles lie with their centers at an angle of 135 degrees to the horizontal, but they are much further apart, often tangent to each other. This eye is more near-sighted. Moreover, when the eye is under the influence of belladonna (or even at other times) there may be two or more pairs of images, a strong pair at 135 degrees outside each other, and a weaker pair at about 45 degrees tangent to these; or the figures may be even more complicated. All circles have central dots. With appropriate glasses the images of both eyes become nearly clear. No explanation which has occurred to me (reflection from non-centered systems, split-lens effect, polarization) exactly meets these cases.

2. A second phenomenon which may hold the key to the preceding is the following. If at night I look at a distant electric light (100 feet off, or more) with the left eye and without glasses I see the usual patch of light of the near-sighted eye. This patch, however, is not a uniformly bright disc about one degree in angular diameter, but contains an accurately drawn circle in black of a diameter somewhat less than one third that of the disc and placed a little above the center to the right. There is no appreciable color effect or successive annuli. The circles, though scarcely visible within fifty feet, from the light naturally increase in size with the distance of the source. There is no doubt that with an appropriate Wollaston prism (departing somewhat from the ophthalmometer) they could be used for the measurement of this distance. In explanation of these phenomena it seems to me that a globule of relatively low

refractivity imbedded in the lens would come nearest. Such a bubble would replace a concave lens in front of the eye, and the rays brought more nearly to a focus would leave a deficiency around the area of convergence. Possibly the images in the preceding paragraph may be explained in the same way.

3. A third phenomenon is probably quite well known, though I must here also confess my ignorance. The diffuse and faint (false) corona which most people see around a distant point source, changes to an intensely brilliant and narrow colored ring with the blue packed close upon the red, whenever the pupil is opened by belladonna. That no true (objective) corona is in question may be proved at once by blotting out the point source with the sharp end of a pin, whereupon the phenomenon vanishes completely, although the region in which the corona was localized is still almost wholly visible. As the effect of the stimulus subsides the aperture of the red annulus, which is about 7 degrees in the brilliant and narrow state, with all colors close together, expands to about 9.5 degrees for the faint and diffuse case with the colors far apart, during the three or four days of contraction of the pupil.

The observation here in question is not lacking in interest for the physicist; yet I have often been provoked at not finding any allusion to such an obtrusive phenomenon in the treatises on optics with which I happen to be acquainted.

CARL BARUS.

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PRESERVING SPIDERS' WEBS.

SPIDERS' webs are so interesting in themselves and each web is so characteristic of the particular species to which its maker belongs that their study is one of the most fascinating of natural history pursuits. However, if I am not mistaken, it is not generally known that they can be easily and permanently preserved for future study or display. One method of doing this occurred to me several years ago while watching Mr. Jas. H. Emerton spraying webs for photographing, and I have since used it so successfully that it seems worth describing.

The web to be preserved is sprayed with artist's shellac from an atomizer, in much the same way that crayon drawings are fixed, and immediately a clean glass plate is pressed against it, carefully breaking, at the same time, the supporting strands so that the web, which will stick to the glass, is freed from its former surroundings. Since every strand of the web is covered with minute droplets of shellac, they are rendered plainly visible and, furthermore, they adhere very tightly to the glass. In a short time the shellac will thoroughly dry and the plates holding the webs can be filed away in a cabinet or hung up for display. If desired, the web may be protected by covering it with another glass plate in the way that the film of a lantern slide is protected, but this is not usually necessary.

The above directions apply paticularly to the flat webs of the Epeiridæ, but with a little ingenuity almost any spider's web may be preserved in its natural form. For instance, I obtained a permanent mount of the dome-shaped web of *Linyphia marginata* in the following way: A branched twig was cut and stripped of its leaves. This was fastened in an upright position on a suitable base and several females of *L. marginata* put on it after sunset. The next morning I had a beautiful web with a perfect dome and all the outlying threads. The only thing that remained to be done was to spray it with shellac and set it away. The Theridiidæ also give very satisfactory specimens in much the same way. But for the orb webs I think the glass plates are preferable.

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A NEW METEORITE FROM SCOTT COUNTY, KANSAS.

A HITHERTO unreported meteorite fall took place on the night of September 2, 1905, about 9:30 P.M., in Scott County, Kansas. The fall was attended with the usual explosion, light and sound, variously compared to cannonading and the roll of heavy wagons.

Thus far fourteen pieces of the stone have