of the slit marked by a pair of spider-lines. I see that Professor Young has a different arrangement for accomplishing, with similar facility, the same purpose.

Respectfully submitted.

J. HOMER LANE.

Professor BENJAMIN PEIRCE,
Superintendent of the United States Eclipse Expedition.

WASHINGTON, *June* 30, 1873.

DEAR SIR: The following is my report on the observations of the total eclipse of the sun on December 21, 1870. In accordance with your directions I went to Catania to observe the eclipse. I was to have observed it with the same spectroscope and telescope with which I observed the eclipse of 1869, but fitted with Professor Winlock's attachment for recording the position of the spectral lines. Unfortunately, owing to a mistake with which I was in no way concerned, this instrument was dispatched to Spain, and the circumstance was not discovered in time to get the instrument or to go to it. Mr. Adams, of the English expedition, was good enough to lend me an eye-piece with a Savart polariscope. I fitted this to a telescope which I found among the instruments of our own party, in order to observe the nature of the polarization of the corona. I was stationed at the villa of the Marquis di San Giuliano, some three miles behind Catania, on the road to Etna. The weather was remarkably clear in the morning, but a storm blew up at the time of the eclipse, and it was raining during the total phase, at least at the beginning of it. Fortunately, a very small opening occurred in the clouds, so that the observations could be made, although under disadvantageous circumstances. I had previously tested the telescope for polarization, and found none perceptible. The plan was to set first upon the dark face of the moon and turn the polariscope so that the bands disappeared, and then observe the position angle (from the center of the moon) of that part of the corona on which the bands attained their maximum. I observed two parts of the corona, differing 180° in position angle, and found the plane of polarization to be about 6° from the radial position, being more nearly vertical. The parts observed upon were 65° and 145° from the vertex towards the east in position angle. The measures were made upon a part about six or seven minutes from the limb. The measures both of the position of the plane of polarization and of position angle were recorded by scratches upon the lacquer of the eye-piece, the edge of the polariscope affording the means of measuring the latter.

Yours, very respectfully,

C. S. PEIRCE.

Professor BENJAMIN PEIRCE,
Superintendent Coast Survey.

Report of Mrs. Charles S. Peirce.

DEAR SIR: My duty as a member of the United States Coast Survey Expedition to the Mediterranean for observing the eclipse of 1870, was to sketch the corona, and I will premise that my knowledge of drawing extends merely to outlinings and shading single objects. That is, I cannot group a landscape rapidly and effectively, but any one object in a landscape I believe I can copy with great accuracy.

After we arrived at Catania, Mr. Lockyer, of the English expedition, kindly lent me a copy of the twelve observations, more or less, which he had drawn up, as being important for the sketchers to make, and these I conned diligently. I also heard, through Professor Peirce, that Mr. Lockyer was advising his sketchers to practice from pictures of former coronas, pinned up on the wall, and to see how many outlines they could dash off in a given time.

I immediately acted upon this hint, but the only copy of a corona of which, as it happened, I could have the use, was one of a former eclipse by Padre Secchi, with what, I must think, exaggerated rays and streamers radiating out from it in all directions. This I pinned high up on my bed-hangings, and copied endless times, by first drawing circles on my paper, and quartering them,