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ART. XIV. — *Historical Note on the Observation of the Corona and Red Prominences of the Sun*; by EDWARD S. HOLDEN.

So much interest attaches to the phenomena of the corona and red prominences, as observed during total solar eclipses, and correct views of their nature and of the proper means of observing them are so recent, that I feel it proper to give here a brief account of what I believe to be the first attempt to see these, under ordinary conditions, with an uneclipsed sun.* This account is contained in the private diary of the late G. P. Bond, formerly Director of the Observatory of Harvard College, which has become known to me through the kindness of his daughters.

Bond observed the total solar eclipse of July 28th, 1851, at Lilla Edet in Sweden, and his report is published in the *Memoirs of the Royal Astronomical Society*, vol. xxi, page 97.

From Sweden, Bond went to Geneva, where he arrived in September, 1851, and from this point I may transcribe from his diary, making no changes except the occasional insertion or omission of unimportant words.

“Geneva, Sunday, Sept. 14, 1851.

I think I must go to Chamounix to try whether it may be possible to discern the red flames on the sun's disk by occulting all but the very edge, upon one of the lofty peaks. It

* Airy, Nasmyth, Baden-Powell, Piazzi-Smith and others experimented in this direction, about this time, with various results. See *Edinburgh Astr. Obs.*, vol. xi, p. 279; *Mem. R. A. S.*, vol. xvi, p. 301, etc.

seems to me not altogether impossible. Certainly an experiment worth trying and a new application of the '*Aiguilles*.'

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Geneva, Sept. 15, 1851.

* * * The weather looks dark and lowering with an uncomfortable northeast wind, but M. Plantamour thinks it is likely to be fine weather, and on this recommendation I took a place in the diligence for Chamounix. * * *

Chamounix, Sept. 18, 1851.

Last evening the stars were shining through the opening clouds, giving promise of improving weather, but a glance out of the window, this morning, dispels all such anticipations.

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Chamounix, Sept. 19, 1851.

I woke this morning at five and my first impulse was to go to the window to see the signs of the weather. Last night I had hopes of an improvement. But I was surprised to find a clear sky; some clouds were resting round the '*aiguille*,' but the summit of Mt. Blanc was clear. Started for Montanvert at 7.15 with a guide. * * *

Mer de Glace.

* * * Attempted two or three times to hide the sun's disk by projecting rocks to try to see the red prominences, but could not get a station far enough off. * * *

Chamounix, Sept. 20, 1851.

* * * Snowing fast in morning. Weather desperately bad. But before going to bed it was quite clear. * * *

Chamounix, Sept. 21, 1851.

* * * The fine prospects of last night were effectually put aside by another snow storm. * * *

Chamounix, Sept. 22, 1851.

The morning bad as usual. * * *

Chamounix, Sept. 23, 1851.

This morning still cloudy, yet the prospect for an improvement was encouraging. Soon after breakfast the sun appeared struggling in the clouds, and I hurried off with a spy-glass not to lose the slightest chance of seeing the phenomena I wished to; * * * I spent two or three hours in the wet fields to no purpose. In the afternoon there was an effort at clearing again.

Chamounix to Martigny, Sept. 24, 1851.

The clouds this morning still hung on the mountains, but overhead there seemed some signs of clear sky. To make sure of losing no chance I took an early breakfast and left for the fields with the ordinary spy-glass belonging to the hotel under my arm. Sometimes it would be almost clear, and then again it began to rain, and I was undecided whether to give up and

start for Martigny or to stay another day. At last I saw the sun's disk and took up my station on the edge of the shadow of the '*Aiguille de Blettière*.' It was still cloudy, but I was satisfied from the nature of the experiment:—

1st. That a very clear air is necessary.

2d. Plenty of time to choose projections, affording views of as large a portion of the circumference of the disk as possible while the rest is hidden.

And lastly, a good achromatic telescope easily moved.

I did not expect to find it so easy an experiment, nor to find a mass so well-fitted for the purpose as the '*Aiguille de Blettière*' which has a smooth edge, inclined, so as to allow the sun to disappear slowly behind it.

The naked eye easily bears a small portion of the sunlight. From 7 to 9½ I followed the shadow over the valley. It was nearly clear for a few moments before it reached the woods on the side of the mountain, but there were still some light clouds over the sun and nothing could be seen certainly of the corona; the clouds and mist would account for what I did see, and on the other hand, the color of the telescope supplied too much red just at the edge for one to be able to see any of the red flames, if they existed there.

On the whole, I am more than ever sure that the experiment can be made, and I think will be by some one more fortunate than I."