

ON THE SOLAR ECLIPSE OF MARCH 15<sup>TH</sup>, 1858, AS SEEN  
AT BURNLEY.

*By T. T. Wilkinson, F.R.A.S.*

(READ 18<sup>TH</sup> MARCH, 1858.)

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Since this locality appears to have been peculiarly favoured with regard to opportunities for observing the eclipse, perhaps the following notes may not be unacceptable to the society.

1. At the time of commencement here the sky was totally obscured, and no hope existed that the eclipse would be seen at any period of its duration.

2. Shortly before twelve o'clock, however, the stratum of clouds began to appear less dense, and at five minutes past twelve the disc of the sun became distinctly visible through the haze.

3. After an interval of fifteen minutes, several openings were formed through the clouds, and an opportunity was afforded of observing the colour of the sky. This at first seemed to be somewhat of a dark purple hue, but it shortly changed into what an artist would call a dirty grey. This was most evident around the edges of the openings, whilst the centre of each exhibited a near approach to a deep black, and seemed to project forward from the rest of the opening.

4. At twenty-five minutes past twelve the clouds almost cleared away from the vicinity of the sun; and for about ten minutes the eclipse was observed at the greatest advantage. A deep gloom gradually settled upon the face of nature, and at the period of greatest obscuration it resembled the evening twilight, when the sun has disappeared behind a thick bank of clouds. The sparrows forsook their usual haunts, and even the poultry ceased to seek for food.

5. From this time to near the close the scudding haze occasionally obscured the sun; but at rapid intervals the progress of the eclipse could be observed without much inconvenience. Indeed, the hazy clouds served as a medium through which the sun could be seen without the use of smoked or coloured glasses; for it was only when these were absent that

glasses became necessary. Many persons observed the eclipse most effectually by turning their backs upon the sun and noting his phases as reflected from the apparently dark windows of our shops.

6. When dense rainy clouds passed the sun a curious phenomenon always took place. No sooner did their highly-charged edges appear to touch the sun's disc than the bright crescent instantly became magnified to three or four times its real breadth; the dark body of the moon appeared to start back, and a flood of light was immediately dispersed through the atmosphere, which for the time almost dispelled the prevailing gloom. The thin margins of the clouds evidently acted the part of a reflector, and the sudden changes from dim twilight to almost bright day were at once remarkable and beautiful in the extreme.

7. At the instant of greatest obscuration, the sun was hidden from view by a dense mass of passing clouds; but a few minutes after they cleared away and showed that the crescent of light had changed from south-east to south-west. An appearance resembling Baily's beads was visible at the extremities of the cusps on several occasions, but these appearances were probably magnified by the watery state of the atmosphere. A slight shower of rain had just fallen, and the black inky appearance of the water on the tops of the houses was very extraordinary. This, together with the partial absence of light, produced a sensation of chilliness which would probably not have been felt so sensibly had one of the exciting causes been absent.

8. No difficulty was experienced in reading ordinary print at the usual distances at any time during the eclipse, but placards on the walls became indistinct at a distance of twenty or thirty yards, just as in the evening twilight.

9. At thirty-eight minutes past one the sun became again totally obscured by dense clouds, and no further observations could be made. Heavy rain fell during most of the afternoon, and the end of the eclipse could only be inferred from the presence of the usual amount of light and heat.