

observers accorded. They all found the protuberances to give bright lines, and, therefore, the question of their gaseous constitution was settled. There was not quite such identity in the opinion as to the number and position of the bright lines. All the observers, except Lieut. Herschel, observed two of the hydrogen lines. The blue line which he lays down corresponds, however, so nearly to the hydrogen line, F, which the others are sure they detected, that we may consider them the same. All likewise agree in having seen a line in the yellow, near the double D line of sodium; and M. Rayet noted lines indicating the presence of iron and manganese. He distinctly observed nine lines in one protuberance, and only eight in another. "Hence," he remarks, "all the protuberances do not emit identical light." The observations on the corona were more discordant. M. Rayet, with his powerful instrument, could not detect the faintest spectrum, whereas Major Tennant positively reports a continuous spectrum.

Capt. Branfell, of the same party, reports "the protuberances unpolarized, and the corona strongly polarized, everywhere in a plane passing through the centre of the sun." There is the usual disagreement with regard to the color of the protuberances, Major Tennant pronouncing them white, but all others assigning to them some shade of red.

Such are the principal results of the memorable eclipse of 1868; but they were immediately thrown into the shade, and rendered well nigh superfluous, by a discovery made almost simultaneously by M. Janssen in India, and Mr. Norman Lockyer in England, by which the spectroscopic phenomena of the protuberances may be viewed any day without the interposition of the moon.

The coincidence in time of the same discovery by two men, at the antipodes, ranks among the curiosities of science with the simultaneous discovery of Neptune by Adams and Leverrier.

More than three years ago Mr. Lockyer conceived the idea of viewing the protuberances in full sun-light by passing a spectroscope with great dispersive power around the sun's disc. His instrument being unsuitable, one of a peculiar construction was ordered in 1867, but only finished in the autumn of 1868. His anticipations were realized by his first observation. In broad daylight he was enabled to trace the position and shape of the protuberances upon the sun's disc, by means of the bright lines which their spectrum gave. A few days after the publication of