

The total eclipse of the sun in 1868, '69 and '70 were observed with great interest by those desirous of obtaining evidence tending to establish the principles upon which spectrum analysis proceeds. It is evident that if the dark lines of the solar spectrum are occasioned by the absorption of rays of corresponding refrangibility by vapours surrounding the incandescent nucleus of the sun, then when the nucleus is eclipsed and its light intercepted the glowing vapour should give a reversed spectrum, bright lines taking the place of the dark ones, according to well-established law of luminous gases. The observations in 1868 and 1869 were not altogether satisfactory; for, while the dark lines disappeared during total obscuration, they were not replaced by bright ones. But in 1870, Prof. Young went to Spain to observe the eclipse of that year, and had the satisfaction and the honour of seeing what man had never seen before—the dark lines of the solar spectrum replaced for a few seconds by the bright lines of the luminous vapour.

On the 28th of September of the same year, Prof. Young succeeded in making the first photograph of the prominences on the sun's limb in bright sunshine. Though the plate was only half an inch in diameter, yet the forms of the prominences could be clearly discerned, so that the possibility of photographing them has been fully established by this experiment.

He also devoted much time to the observation of solar storms, during one of which a mass of hydrogen gas was observed to shoot up from the surface of the sun, a distance of 60,000 miles in half an hour.

Spectrum analysis is still in its infancy; and it is to be hoped that more American scientists will be found, who will reflect upon us equal credit with Prof. Young, and that an intelligent public will be liberal in furnishing investigators with the necessary appliances. H. S. C.—*Tripod*.

Then and Now.

THE following extract is from a letter written by a prominent citizen of Haverhill, Mass., to a gentleman then in Lisbon, Portugal. It sounds queerly at the present time! Only God can see the end from the beginning. The letter came to our hands well authenticated, and so far as we know has never been published before. It is dated Feb. 12th, 1812: