

view, as well in his opening address before the British Association at Cambridge in 1845, as in the *Outlines of Astronomy*, 1849, where he expresses himself as follows: "The magnificent reflecting telescope constructed by Lord Rosse, six feet in aperture, has resolved or rendered resolvable multitudes of nebulæ which had resisted all inferior powers. . . . Although, therefore, nebulæ do exist which, even in this powerful telescope, appear *as* nebulæ, without any sign of resolution, it may very reasonably be doubted whether there be really any essential physical distinction between nebulæ and clusters of stars."\*

The constructor of the powerful optical apparatus at Parsonstown, who always discriminates between the result of actual observation and the promises of a knowledge to which we hope to attain, expresses himself with much caution regarding the nebula in Orion, in a letter to Professor Nichol, of Glasgow, † dated Parsonstown, 19th of March, 1846: "In accordance with my promise of communicating to you the result of our examination of Orion, I think I may safely say, that there can be little, if any, doubt of the resolvability of the nebula. Since you left us, there was not a single night when, in absence of the moon, the air was fine enough to admit of our using more than half the magnifying power the speculum bears; still we could plainly see that all about the

town telescope, and that a great number of nebulæ appeared like clusters or groups of stars, while others, at least to his sight, presented no appearance of resolution."

\* See *Outlines*, p. 597, 598; also the *Report of the Fifteenth Meeting of the British Association held at Cambridge in June, 1845*, p. xxxvi.: "By far the major part," says Sir John Herschel, "probably, at least, nine tenths of the nebulous contents of the heavens, consist of nebulæ of spherical or elliptical forms, presenting every variety of elongation and central condensation. Of these a *great number* have been resolved into distant stars (by the reflector of the Earl of Rosse), and a vast multitude more have been found to present that mottled appearance which renders it almost a matter of certainty that an increase of optical power would show them to be similarly composed. A not unnatural or unfair induction would therefore seem to be, that those which resist such resolution do so only in consequence of the smallness and closeness of the stars of which they consist; that, in short, they are only optically, and not physically nebulous. Although nebulæ do exist which, even in this powerful telescope (of Lord Rosse), appear as nebulæ, without any sign of resolution, it may very reasonably be doubted whether there be really any essential physical distinction between nebulæ and clusters of stars."

† Dr. Nichol, Professor of Astronomy at Glasgow, published the letter above referred to in his *Thoughts of some Important Points relating to the System of the World*, 1846, p. 55.