

something casual and accidental about the great ideas which British men of science contributed during the first half of the century. Each of them chooses an isolated position, a special form of delivery, frequently a language and style of his own. They attach little or no importance to the labours of others, with which they are frequently unacquainted.<sup>1</sup> Important papers are lost or buried, as in the case of Cavendish and Green. Novel ideas are communicated in unintelligible language and symbols, and accordingly neglected. This was the case with Dr Young's writings, and to a certain extent with Faraday's. The greatest discoveries were unduly postponed through the absence of assistance, as seems to have been the case with Adams's discovery of Neptune,<sup>2</sup> perhaps with Stokes's anticipation of spectrum analysis.<sup>3</sup>

42.  
Isolation of  
English men  
of science.

<sup>1</sup> This is correct of most of the great men referred to in the course of this chapter. Among them, however, Rowan Hamilton forms an exception. Though working on quite original lines, he took a great interest in the labours and suggestions contained in the writings of his forerunners and contemporaries, as the historical notices in the preface to his 'Lectures on Quaternions' (1853) prove; likewise his correspondence with De Morgan (see 'Life of Sir W. R. H.,' vol. iii.)

<sup>2</sup> The story of the discovery of Neptune has been frequently told. The first publication of the elements of the suspected planet, which enabled a search to be made, came from Leverrier to the Paris Academy of Sciences on the 1st July and the 31st August 1846. In consequence of this publication, Galle at Berlin, requested by Leverrier to search in the neighbourhood of  $\delta$  Capricorni, and comparing his observations made on the same

night on which he received the request, 23rd September 1846, with Bremiker's map, actually found the planet. Subsequently it became known that Adams of Cambridge had already communicated his elements in September and October 1845 to Challis and Airy, and that the former had actually seen the planet on the 4th and 12th of August 1846, but—for want of equally detailed maps—had not compared the observation and established the discovery. See Whewell's 'History of the Inductive Sciences,' third ed., 1857, vol. ii. p. 460, &c.; also Wolf, 'Geschichte der Astronomie,' p. 537, &c.

<sup>3</sup> It appears from a communication of Sir William Thomson (Lord Kelvin) to Kirchhoff immediately after the latter had published in 1859 his explanation of the identity of the dark lines in the solar spectrum with the bright lines in the spectra of coloured flames, that Stokes, soon after the publication,