

omers of all future time. The work appeared in 1845 ; the expense of the compilations and the publication being defrayed by the British Government.

*The Discovery of Neptune.*

The theory of gravitation was destined to receive a confirmation more striking than any which could arise from any explanation, however perfect, given by the motions of a known planet ; namely, in revealing the existence of an unknown planet, disclosed to astronomers by the attraction which it exerted upon a known one. The story of the discovery of Neptune by the calculations of Mr. Adams and M. Le Verrier was partly told in the former edition of this History. I had there stated (vol. ii. p. 306) that “ a deviation of observation from the theory occurs at the very extremity of the solar system, and that its existence appears to be beyond doubt. Uranus does not conform to the Tables calculated for him on the theory of gravitation. In 1821, Bouvard said in the Preface to the Tables of this Planet, “ the formation of these Tables offers to us this alternative, that we cannot satisfy modern observations to the requisite degree of precision without making our Tables deviate from the ancient observations.” But when we have done this, there is still a discordance between the Tables and the more modern observations, and this discordance goes on increasing. At present the Tables make the Planet come upon the meridian about eight seconds later than he really does. This discrepancy has turned the thoughts of astronomers to the effects which would result from a planet external to Uranus. It appears that the observed motion would be explained by applying a planet at twice the distance of Uranus from the Sun to exercise a disturbing force, and it is found that the present longitude of this disturbing body must be about 325 degrees.

I added, “ M. Le Verrier (*Comptes Rendus*, Jan. 1, 1846) and, as I am informed by the Astronomer Royal, Mr. Adams, of St. John’s College, Cambridge, have both arrived independently at this result.”

To this Edition I added a Postscript, dated Nov. 7, 1846, in which I said :

“ The planet exterior to Uranus, of which the existence was inferred by M. Le Verrier and Mr. Adams from the motions of Uranus (vol. ii. Note (L.)), has since been discovered. This confirmation of calculations founded upon the doctrine of universal gravitation, may be looked upon as the most remarkable event of the kind since the return of Halley’s comet in 1757 ; and in some respects, as a more striking event