

that when inflammable air is used in this phlogistication (or burning), the diminution of the common air is accompanied by the formation of a dew in the apparatus.⁵ And thus he infers⁶ that "almost all the inflammable air, and one-fifth of the common air, are turned into pure water."

Lavoisier, to whose researches this result was, as we shall soon see, very important, was employed in a similar attempt at the same time (1783), and had already succeeded,⁷ when he learned from Dr. Blagden, who was present at the experiment, that Cavendish had made the discovery a few months sooner. Monge had, about the same time, made the same experiments, and communicated the result to Lavoisier and Laplace immediately afterwards. The synthesis was soon confirmed by a corresponding analysis. Indeed the discovery undoubtedly lay in the direct path of chemical research at the time. It was of great consequence in the view it gave of experiments in composition; for the small quantity of water produced in many such processes, had been quite overlooked; though, as it now appeared, this water offered the key to the whole interpretation of the change.

Though some objections to Mr. Cavendish's view were offered by Kirwan,⁸ on the whole they were generally received with assent and admiration. But the bearing of these discoveries upon the new theory of Lavoisier, who rejected phlogiston, was so close, that we cannot further trace the history of the subject without proceeding immediately to that theory.

[2nd Ed.] [I have elsewhere stated,⁹—with reference to recent attempts to deprive Cavendish of the credit of his discovery of the composition of water, and to transfer it to Watt,—that Watt not only did not anticipate, but did not fully appreciate the discovery of Cavendish and Lavoisier; and I have expressed my concurrence with Mr. Vernon Harcourt's views, when he says,¹⁰ that "Cavendish pared off from the current hypotheses their theory of combustion, and their affinities of imponderable for ponderable matter, as complicating chemical with physical considerations; and he then corrected and adjusted them with admirable skill to the actual phenomena, not binding the facts to the theory, but adapting the theory to the facts."

I conceive that the discussion which the subject has recently received, has left no doubt on the mind of any one who has perused the docu-

⁵ *Phil. Trans.* 1784, p. 128. ⁶ *Ib.* p. 129. ⁷ *A. P.* 1781, p. 472. ⁸ *P. T.* 1784, p. 154.

⁹ *Philosophy*, b. vi. c. 4.

¹⁰ *Address to the British Association*, 1839.