

the responsibility which the narration involves; and I have endeavored earnestly, and I hope not in vain, to speak as if I were removed by centuries from the personages of my story.

The phenomena observed in the Voltaic apparatus were naturally the subject of many speculations as to their cause, and thus gave rise to "Theories of the Pile." Among these phenomena there was one class which led to most important results: it was discovered by Nicholson and Carlisle, in 1800, that water was *decomposed* by the pile of Volta; that is, it was found that when the wires of the pile were placed with their ends near each other in the fluid, a stream of bubbles of air arose from each wire, and these airs were found on examination to be oxygen and hydrogen; which, as we have had to narrate, had already been found to be the constituents of water. This was, as Davy says,¹ the true origin of all that has been done in electro-chemical science. It was found that other substances also suffered a like decomposition under the same circumstances. Certain metallic solutions were decomposed, and an alkali was separated on the negative plates of the apparatus. Cruickshank, in pursuing these experiments, added to them many important new results; such as the decomposition of muriates of magnesia, soda, and ammonia by the pile; and the general observation that the alkaline matter always appeared at the *negative*, and the acid at the *positive*, pole.

Such was the state of the subject when one who was destined to do so much for its advance, first contributed his labors to it. Humphry Davy was a young man who had been apprenticed to a surgeon at Penzance, and having shown an ardent love and a strong aptitude for chemical research, was, in 1798, made the superintendent of a "Pneumatic Institution," established at Bristol by Dr. Beddoes, for the purpose of discovering medical powers of factitious airs.² But his main attention was soon drawn to galvanism; and when, in consequence of the reputation he had acquired, he was, in 1801, appointed lecturer at the Royal Institution in London (then recently established), he was soon put in possession of a galvanic apparatus of great power; and with this he was not long in obtaining the most striking results.

His first paper on the subject³ is sent from Bristol, in September, 1800; and describes experiments, in which he had found that the decompositions observed by Nicholson and Carlisle go on, although the

¹ *Phil. Trans.* 1826, p. 386.

² Paris, *Life of Davy*, i. 58.

³ Nicholson's *Journal*, 4to. iv. 275.