

of heat by friction and percussion, that heat is not matter, but "may be defined a peculiar" motion, probably a vibration,¹ of the corpuscles of bodies tending to separate them. Rumford's and Davy's memoirs referred to belong to the last years of the eighteenth century. Dr Young, in his celebrated lectures on natural philosophy, discussing the experiments of Rumford and Davy came to the conclusion "that heat is a quality, and that this quality can only be motion." He refers to Newton's view "that heat consists in a minute vibratory motion of the particles of bodies," and to his own undulatory theory of light. This analogy with light seems to have for a long time served to unify the speculations² of those who were inclined to

¹ See his "Essay on Heat, Light, and the Combinations of Light," which appeared in Beddoes' 'Contributions to Physical and Medical Knowledge,' 1799. This essay Davy soon after condemned as "infant chemical speculations," from which he turned away to experimental work, remarking that chemical knowledge was yet too incomplete to allow of generalisations, and that the "first step will be the decomposition of those bodies which are at present undecomposed." This was written in 1799. In 1800 (30th March) Volta's invention of the "pile" was communicated to the Royal Society, and on the 30th April of that year the first pile was constructed in this country. See the first and second volumes of Davy's 'Collected Works,' London, 1839. Davy's first publication on voltaic electricity appeared in the September number of 'Nicholson's Journal.' Though the speculations of Davy on heat and light, in which heat

is conceived to be motion and light (strangely) to be material, were discarded by him, they attracted the attention of Franklin and of Count Rumford. Davy states that his experiments on the generation of heat "were made long before the publication of Count Rumford's ingenious paper on the heat produced by friction" (*loc. cit.*, vol. ii. p. 117). In spite of his own refusal to follow up the lines of thought suggested by them, they were probably the cause of Davy's appointment as lecturer on chemistry at the Royal Institution: see vol. i. p. 83; also Memoir of Count Rumford ('Works,' vol. i. 417), and Paris's 'Life of Davy,' vol. i. p. 112, &c. Tait, in 'Recent Advances,' gives a full account of Rumford's and of Davy's work.

² See 'Young's Lectures,' 51 and 52. In the second edition, published by Kelland forty years after the Lectures were delivered, the editor makes the following significant remark: "The theory of heat