

of simple substances and their compounds are as whole numbers.<sup>9</sup> MM. Kopp, Playfair, and Joule have labored in the same field.]

I cannot now attempt to trace other bearings and developments of this remarkable discovery. I hasten on to the last generalization of chemistry; which presents to us chemical forces under a new aspect, and brings us back to the point from which we departed in commencing the history of this science.

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## CHAPTER IX.

### EPOCH OF DAVY AND FARADAY.

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#### *Sect. 1.—Promulgation of the Electro-chemical Theory by Davy.*

THE reader will recollect that the History of Chemistry, though highly important and instructive in itself, has been an interruption of the History of Electro-dynamic Research:—a necessary interruption, however; for till we became acquainted with Chemistry in general, we could not follow the course of Electro-chemistry: we could not estimate its vast yet philosophical theories, nor even express its simplest facts. We have now to endeavor to show what has thus been done, and by what steps;—to give a fitting view of the Epoch of Davy and Faraday.

This is, doubtless, a task of difficulty and delicacy. We cannot execute it at all, except we suppose that the great truths, of which the discovery marks this epoch, have already assumed their definite and permanent form. For we do not learn the just value and right place of imperfect attempts and partial advances in science, except by seeing to what they lead. We judge properly of our trials and guesses only when we have gained our point and guessed rightly. We might personify philosophical theories, and might represent them to ourselves as figures, all pressing eagerly onwards in the same direc-

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<sup>9</sup> *Die molecular-volume der Chemischen Verbindungen in festen und flüssigen Zustände*, 1843.