

ral phenomena above stated would be accounted for. And the choice between the two modes of conception, appeared at first sight a matter of indifference. The majority of philosophers at first adopted, or at least employed, the former method, as Oersted in Germany, Berzelius in Sweden, Wollaston in England.

Ampère adopted the other view, according to which the magnet is made up of conducting-wires in a transverse position. But he did for his hypothesis what no one did or could do for the other: he showed that it was the only one which would account, without additional and arbitrary suppositions, for the facts of *continued* motion in electromagnetic cases. And he further elevated his theory to a higher rank of generality, by showing that it explained,—not only the action of a conducting-wire upon a magnet, but also two other classes of facts, already spoken of in this history,—the action of magnets upon each other,—and the action of conducting-wires upon each other.

The deduction of such particular cases from the theory, required, as may easily be imagined, some complex calculations: but the deduction being satisfactory, it will be seen that Ampère's theory conformed to that description which we have repeatedly had to point out as the usual character of a true and stable theory; namely, that besides accounting for the class of phenomena which suggested it, it supplies an unforeseen explanation of other known facts. For the mutual action of magnets, which was supposed to be already reduced to a satisfactory theoretical form by Coulomb, was not contemplated by Ampère in the formation of his hypothesis; and the mutual action of voltaic currents, though tried only in consequence of the suggestion of the theory, was clearly a fact distinct from electromagnetic action; yet all these facts flowed alike from the theory. And thus Ampère brought into view a class of forces for which the term "electromagnetic" was too limited, and which he designated¹ by the appropriate term *electrodynamic*; distinguishing them by this expression, as the forces of an electric *current*, from the *statical* effects of electricity which we had formerly to treat of. This term has passed into common use among scientific writers, and remains the record and stamp of the success of the Amperian induction.

The first promulgation of Ampère's views was by a communication to the French Academy of Sciences, September the 18th, 1820; Oersted's discoveries having reached Paris only in the preceding July.

¹ *Ann. de Chim.*, tom. xx. p. 60 (1822).