

familiarise the unscientific public with the progress of science and its canons of thought. And it would thus appear natural to resort to their teaching and their explanations. But this is not the road I propose to follow. Whewell's 'History of the Inductive Sciences,' being the first attempt to compass a large subject, will, like Montucla's earlier 'History of Mathematics,' always remain a standard work. It was, however, written at a time when the tendency of modern scientific thought was

Philosophy was broken up into different parts. Herschel stands mainly on the ground of Bacon's philosophy, whereas Whewell starts with the remark that "Bacon only divined how sciences might be constructed," but that "we can trace in their history how their construction has taken place"; that "though Bacon's general maxims still guide and animate philosophical inquirers, yet that his views, in their detail, have all turned out inapplicable." He accordingly aims at a "New Organ of Bacon, renovated according to our advanced intellectual position and office" (Preface to 2nd ed. of the 'Philosophy,' 1847). In the exposition of his views Whewell was greatly influenced by Kant's philosophy. He thus searches for the fundamental ideas which underlie all scientific reasoning; for "besides facts, ideas are an indispensable source of our knowledge." The historical portions of Whewell's works have met with great appreciation in England and Germany even from those who, like Herschel (see the review in the 'Quarterly,' June 1841) and Mill (see 'Autobiography,' p. 208), could not agree with his philosophy. The latter has been eclipsed by the bolder speculations of Auguste Comte, whose 'Philosophie positive' appeared in six volumes between the

years 1830 and 1842 in France. Still more than Whewell did Comte emphasise the necessity of learning from the exact sciences how to treat economical and social problems in a methodical manner. Instead of the minute and frequently hesitating elaborations of Whewell, we find in Comte the bold generalisation of the three stages of knowledge—the theological, metaphysical, and positive,—which forms the groundwork of "Positivism." Of more permanent value than Whewell's and Comte's philosophies are the investigations of J. Stuart Mill, who in his 'System of Logic, Ratiocinative and Inductive' (1st ed., 1843), has laid the foundation for all subsequent treatises on this subject, and whose thoroughgoing empiricism is being more and more adopted by scientific thinkers. Like Whewell and Comte, to whom he acknowledges his obligations ('Autobiog.,' pp. 165, 209, &c.), his ultimate object was to solve the question "how far the methods by which so many of the laws of the physical world have been numbered among truths irrevocably acquired and universally assented to, can be made instrumental to the formation of a similar body of received doctrine in moral and political science" (Preface to 1st ed.)