there is however no difference of opinion on this point, that since his time, and greatly through his labours, the quantitative method has been established as the ultimate test of chemical facts; the principle of this method being the rule that in all changes of combination and reaction, the total weight of the various ingredients—be they elementary bodies or compounds—remains unchanged. The science of chemistry was thus established upon an exact, a mathematical basis. By means of this method Lavoisier, utilising and analysing the results gained by himself and others before him, notably those of Priestley, Cavendish, and Black, succeeded in destroying the older theory of combustion, the so-called phlogistic theory.[1] From a

[1] This result was announced in 1777 to the Paris Academy, and the demonstration completed in a memoir of 1783. "He closes this latter memoir with the expression, that his object had been to bring forward new proofs of his theory of combustion of 1777, and to prove that Stahl's phlogiston was something purely imaginary,—that without it facts could be more easily and more simply explained than with it; he did not expect that his views would be at once accepted, . . . time would have to confirm or to reject the opinions he had developed, but already he recognised with satisfaction that unprejudiced students of the science, unbiassed mathematicians and physicists, believed no longer in phlogiston as Stahl viewed it, and that they considered the whole doctrine more as a hindrance than as a helpful scaffolding in erecting the edifice of science" (Kopp, 'Entwickelung,' p. 202). This and the further remark of Kopp that it was the mathematicians who took up Lavoisier's views (see *supra*, p. 115, note 2) are significant signs of the introduction of the mathematical, the measuring, spirit into chemistry. Few ideas which once exerted so great and lasting an influence on science as that of phlogiston, have so entirely disappeared from our text-books, and it is interesting to note that those whose researches were guided by it were not so far from grasping a valuable truth as has been supposed. This theory, elaborated by Stahl, a contemporary of Newton and Leibniz (1660-1734), was the first attempt to co-ordinate a great mass of observations, to bring the phenomena of chemical change under one common principle. Phlogiston was the thing the migration of which gave rise to chemical change, and as the most obvious changes were exhibited in the processes of combustion, "Phlogiston" or "Brennstoff" was the name which suggested itself as most suitable for this principle. Chemical changes were not to be measured so much by the resulting change of weight as by the readiness with which