The merit of having made this attempt belongs to one who approached chemistry entirely from the mathematical side, who wrote the first chemical book with a title pointing directly to measurements, but who perhaps spoilt his work by giving way to the fascination which regular numerical and geometrical arrangements have again and again exercised over philosophical inquirers. Jeremias Benjamin Richter—a name possessed of no popular celebrity—published in 1792 to 1794, in three parts, his "Stœchiometry, or the art of measuring chemical elements."[1] From his data, Fischer calculated in 1802 the

7. J. Benjamin Richter.

writings of Laplace and his school. Chemical affinity was to be co-ordinated with what he called astronomical attraction; both were to be ultimately the same physical property; they acted differently, because in the case of gravitation the dimensions were so large, that the form, distances, and peculiar properties of the molecules had no influence. It was an attempt to introduce the astronomical view of matter into molecular physics, and to base chemistry upon this view. Berthollet adhered to the corpuscular theory of heat against Rumford, who had just propounded his opinion that heat is not a constituent part of bodies; and he maintained that chemical affinity was a function of the mass of bodies as was astronomical attraction. The germ of truth in Berthollet's views, which were approved by Laplace, but cast into oblivion under the influence of Proust and Richter's theory of fixed proportions, has in recent times been shown by Lothar Meyer ('Modern Theories of Chemistry,' Introduction), and by Ostwald ('Allgemeine Chemie,' vol. ii. p. 557, 1st ed., also 'Die Energie und ihre Wandlungen,' Leipzig, 1888, p. 20). If the astronomical view of molecular phenomena prevented Berthollet from accepting Proust's doctrine of fixed proportions and definite combinations, Richter injured his own reputation by adhering to the nomenclature of the phlogiston theory after it had been discarded by French chemists, and in Germany after Klaproth's determinations in 1792. The oxygen theory of combustion of Lavoisier got such a firm hold on the minds of Continental chemists that the labours of those who, like Cavendish in England and Richter in Germany, put forward important discoveries in the language and on the principles of the older theory, were temporarily forgotten. See Kopp, 'Entwickelung der Chemie,' p. 271, &c.

[1] Stœchiometry comes from the Greek τὰ στοιχεῖα, the constituent parts, and μετρεῖν, to measure. All Richter's works are connected with the application of mathematics to chemistry; his inaugural dissertation, which appeared in 1789, bearing the title 'de usu matheseos in chymia' (Kopp, 'Geschichte der Chemie,' vol. ii. p. 350). "Richter était préoccupé de l'idée d'appliquer les mathématiques à la chimie, et en