as a kind of revelation, and it is not surprising that it came late in the course of civilisation.[1]

Nothing can have tended more in this direction than the success of the Newtonian gravitation formula, and of the simple laws of motion, which, at the time of the birth of modern chemistry, stood firmly established as the key to all problems of physical astronomy. No wonder that men were on the look-out for correspondingly simple—perhaps analogous—relations in the world of molecular phenomena. One of the earliest suggestions, which came forward soon after Dalton's atomic view had helped to establish the prevailing rule of fixed and of multiple proportions in the chemical combinations and reactions of matter, was the idea that, as to each element belonged a definite combining number, all these numbers must be the multiple of the lowest among them, the equivalent or atomic weight of hydrogen. This is Prout's celebrated hypothesis, which had some ardent admirers, and which has been repeatedly abandoned and revived in the course of this century.[2] It is hardly possible to maintain it any longer, since the accurate and elaborate measurements of

15. Prout's hypothesis.

[1] Except indeed the Pythagorean notions are regarded as an anticipation of it.

[2] The hypothesis of Prout, published anonymously in 1815, and warmly defended by Thomson, has been again and again revived. From the beginning it was put forward together with the suggestion that the different elementary substances might after all turn out to be all derived from one and the same primary form of matter, and that the atoms of this might in the atoms of our present elements merely be aggregated in different numbers and figures, held together by forces, which by the means and processes at our command could not be broken up. This primary substance might then be either hydrogen, the lightest in weight of known substances, or some other substance of which hydrogen itself was an atomic multiple. Abroad, Prout's hypothesis was disproved by Berzelius's accurate determinations, in England by Turner's, and about 1830 it fell into oblivion. It was again revived in 1840 by Dumas, who, as well as his followers, Laurent and Gerhardt, favoured the idea that the explanation of the different properties of chemical compounds, notably organic compounds, was to be found in the arrangement