which the gap in the series which gives the distances of the planets from the sun indicated the existence of a planet, "à chercher une aiguille dans une botte de foin." About the same time that this search was contemplated Piazzi found the first of the small planets, which—like the other subsequently discovered asteroids—corresponds very nearly with the expected position in the system. The periodic system of the elements, according to which the physical and chemical properties of all the elements show a periodic dependence upon the atomic weights, was first systematically stated by Newlands (in 1864) and by Lothar Meyer and Mendeléeff on the Continent. The latest edition of Meyer's treatise on "Modern Theories of Chemistry," of which only the first part, with the title 'Die Atome und ihre Eigenschaften' has been published (posthumously by the author's brother, Breslau, 1896), gives a good idea of how from small beginnings these statistics of the atomic theory of matter have grown into a great accumulation of interesting facts, upon which a system of inorganic chemistry can now be based which compares with the system of organic chemistry founded upon the types of Gerhardt in their original or in some modified form, and upon the "homologous" series of hydrocarbon compounds. As the typical arrangement of organic compounds, or rather of carbon compounds (for many real organic compounds are not easily classed by these methods), led to the suggestion of the existence of many compounds which were not known at the time, and have since been prepared, so the periodic arrangement enabled Mendeléeff to predict the properties of missing numbers of the periodic series. And although this mapping out of the elements according to their atomic weights does not indicate how and where the missing numbers are to be found, as is the case with the law of Titius and Bode, and still more so with the homologous series of carbon compounds, still it is interesting to be able to state that in several instances—notably on the discovery of the new elements, gallium (by Lecoq de Boisbaudran in 1878), scandium (by Nilson in 1880), and germanium (by Winkler in 1886)—the properties of these substances confirmed to a very great extent the predictions of Mendeléeff. And when in 1894 Lord Rayleigh and Professor Ramsay announced their discovery of a new element in atmospheric air, which, from its inertness, was called argon, interesting suggestions as to its properties were drawn from speculations regarding its probable position in the periodic curve (see Lothar Meyer, *loc. cit.*, p. 165). It is true that these numerical regularities, which for some minds possess a great fascination, are, so far, purely statistical. It is possible to arrive by interpolation or extrapolation at valuable suggestions in statistics, in meteorology, and in mining operations; but so long as the actual cause or intrinsic connection is not known, which explains the necessity of these regularities, they are apt to be misleading, and have to be used with great caution. Still, the fact alone that they bring some order into a bewildering mass of figures and data makes them almost indispensable. For similar reasons many chemists adopted Gerhardt's types and homologous series as affording a ready method of classification, though not a rational explanation of phenomena.