Elements of Chemistry. By THOMAS GRAHAM, F. R. S., Professor of Chemistry in University College, London, &c. Second American Edition from an entirely revised, &c., and greatly enlarged English Edition. Edited with notes by ROBERT BRIDGES, M. D., Professor of Chemistry in the Philadelphia Medical College of Pharmacy, &c. Part I. Blanchard and Lea, Phil., 1852.

THIS portion of the above treatise begins with a short but clear account of the most important of the laws of heat. Having merely glanced at the mechanical properties of light, upon which, in our opinion, the author is altogether too brief and condensed, the important subject of polarised light, for instance, being considered in twenty-two lines, he discusses at considerable length the various topics appertaining to what may be called Chemical Philosophy, viz, chemical nomenclature and notation, the laws of combination, isomorphism, chemical affinity and polarity, and the like. The metalloids and their combinations with each other are then described in a very full yet practical manner, and the most approved methods of obtaining the elements and their compounds explained, and illustrated by numerous well executed wood-cuts of the necessary apparatus. The last chapter is devoted to general observations upon the metals, and a particular description of the metallic bases of the alkalies, alkaline earths, and earths proper. In connexion with each metal is found an account of its various compounds with the salt-radicals oxygen, chlorine, iodine, cyanogen, &c., and of the most important salts resulting from the union of its oxide or oxides with the mineral acids, a plan which secures to the student a connected and consecutive account of a metal and all its important chemical combinations.

Being thus occupied with the *principles* of the science, and with that department of chemistry, the *inorganic*, which has been less enlarged and investigated for the past few years than the sister or *organic* department, it can be scarcely expected to contain many novelties, or facts not embodied in the other excellent and recent works upon the same subject already in our hands; and such is actually the case. Hence in our further remarks upon the book before us, we will simply point out some of the passages, opinions, and subjects, that we noted as worthy of comment or mention, when perusing it.

It will be remembered that the late Dr. Prout suggested, and ably supported, the hypothesis that the equivalents of all the elements are simple even multiples of the equivalent of hydrogen, which if regarded as all the others will be whole numbers. Now as this opinion was also maintained by Dr. Thomson and others, and seemed to be sustained by ex-