

and Petit in 1819. The law which bears their name consists of the statement that in the case of elementary substances the product of specific heat and atomic weight is a constant, — roughly, 6.4. Certainly this so-called law is a mere approximation, and some elements, notably carbon, silicon, and boron, at the ordinary temperature, depart widely from its requirements, but in the main the approximation holds good. Later the researches of Neumann, Garnier, Cannizaro, and especially of Kopp made possible an extension of the law to compounds.

It is evident that the law of Dulong and Petit amounts to the statement that for all elementary substances the quantity of heat which is required to change the temperature of every atom, regardless of its nature, is a constant. A brief discussion will serve to make this plain. According to the law the specific heat of an element varies inversely as its atomic weight, diminishing as the atomic weight increases, so that the product of the two quantities remains constant. But of course the number of atoms per gram of substance also varies inversely as the atomic weight. Hence the specific heats of elementary substances and the number of atoms per gram are always roughly proportional, which