

It must be confessed that such data are not a brilliant confirmation of the law. A series of numbers which vary from 2.0 to 6.0 is something quite different from constancy, and every one of these numbers is less than 6.4. It is, however, certain that these quantities are uniformly of the same order of magnitude, and this is all that is of importance for our present purpose. For accordingly they prove that unless the average atomic weight of a substance be very low its specific heat cannot be very high. Of course only compounds which are largely made up of hydrogen can possess very low average atomic weights, and among such those will be lowest in this respect which contain a relatively small number of atoms of another element of low atomic weight, like carbon, nitrogen, oxygen, etc. Of such substances the hydrocarbons make up the only numerous group, and for the most part their specific heats appear to be, like that of elementary carbon itself, considerably lower even than would be predicted by the rule. So it is that the conclusion is warranted that water shares the characteristic of very high specific heat with a very small number of substances, among which hydrogen and ammonia are probably the only important chemical individuals. From this conclusion another