

traction, no change in the nature of the matter acted upon can take place. Thus, in the case before us the acidity of the nitric acid is gone, and a body remains which partakes of none of its powers. The *chemical nature* of the body is not the only thing that experiences a change. Frequently the colour and solidity of the body are equally affected. In the case before us, the resulting compound is of a beautiful blue colour, which was seen in neither of the original bodies. Solids are changed by it into aeri-form shapes, as when gunpowder is inflamed. But we may also observe that, during the process of this union, great commotion appears in the bodies acted upon. This is the case in the instance to which we have already alluded. A great deal of air is extricated during the decomposition of the copper. In many unions, however, the immediate effect is much greater. If sulphuric acid* be added to water, in the proportion of four pounds of the former to one of the latter, so much heat will be produced in the mixture as to raise the thermometer to 300° Fahrenheit.

We shall also find that, after a time, this commotion will cease: from which we may learn that nitric acid and copper will only unite in certain proportions.

Another very important fact in the system of chemical attraction is, that different bodies are possessed of different attractive powers. If into the solution (chemically termed *nitrate of copper*) which we obtained in the former experiment, a piece of iron

* Further mention of sulphuric acid must be postponed for the same reason as that of nitric. It may be obtained at the chemist's. Greater care should be taken of this than of the nitric, as it destroys not only clothes, &c. but also animal fibre, and consequently would cause painful wounds.