

their constituent principles, of which they are only signals, conveyed to our minds as aforesaid. Now, these processes themselves may be, in many instances, rendered *sensible*; that is to say, analyzed, and shown to consist in the motions or other affections of sensible objects themselves. For instance, the phenomenon of the sound produced by a musical string, or a bell, when struck, may be shown to be the result of a process consisting in the rapid vibratory motion of its parts communicated to the air, and thence to our ears; though the immediate effect on our organs of hearing does not excite the least idea of such a motion. On the other hand, there are innumerable instances of sensible impressions which (at least at present) we are incapable of tracing beyond the mere sensation; for example, in the sensations of bitterness, sweetness, &c. These, accordingly, if we were inclined to form hasty decisions, might be regarded as ultimate qualities; but the instance of sounds, just adduced, alone would teach us caution in such decisions, and incline us to believe them mere results of some secret process going on in our organs of taste, which is too subtle for us to trace. A simple experiment will serve to set this in a clearer light. A solution of the salt called by chemists *nitrate of silver*, and another of the *hyposulphite of soda*, have each of them separately, when taken into the mouth, a disgustingly bitter taste; but if they be mixed, or if one be tasted before the mouth is thoroughly cleared of the other, the sensible impression is that of intense sweetness. Again, the salt called *tungstate of soda* when first tasted is sweet, but speedily changes to an intense and pure bitter, like quassia.*

(77.) How far we may ever be enabled to attain a knowledge of the ultimate and inward processes of nature in the production of phenomena, we have no means of knowing; but to judge from the degree of obscurity which hangs about the only case in which we feel within ourselves a *direct* power to produce any one, there seems no great hope of penetrating so far. The case alluded

* Thomson's First Principles of Chemistry, vol. ii. p. 68.