

obvious, by a mere arrangement of our facts in the order of intensity in which some peculiar quality subsists; though not of necessity, because counteracting or modifying causes may be at the same time in action.

(153.) For example: sound consists in impulses communicated to our ears by the air. If a series of impulses of equal force be communicated to it at equal intervals of time, at first in slow succession, and by degrees more and more rapidly, we hear at first a rattling noise, then a low murmur, and then a hum, which by degrees acquires the character of a musical note, rising higher and higher in acuteness, till its pitch becomes too high for the ear to follow. And from this correspondence between the pitch of the note and the rapidity of succession of the impulse, we conclude that our sensation of the different pitches of musical notes originates in the different rapidities with which their impulses are communicated to our ears.

(154.) 6th, That such counteracting or modifying causes may subsist unperceived, and annul the effects of the cause we seek, in instances which, but for their action, would have come into our class of favorable facts; and that, therefore, exceptions may often be made to disappear by removing or allowing for such counteracting causes. This remark becomes of the greatest importance, when (as is often the case) a single striking exception stands out, as it were, against an otherwise unanimous array of facts in favor of a certain cause.

(155.) Thus, in chemistry, the *alkaline* quality of the alkaline and earthy bases is found to be due to the presence of oxygen combined with one or other of a peculiar set of metals. Ammonia is, however, a violent outstanding exception, such as here alluded to, being a compound of azote and hydrogen: but there are almost certain indications that this exception is not a real one, but assumes that appearance in consequence of some modifying cause not understood.

(156.) 7th, If we can either find produced by nature, or produce designedly for ourselves, two instances which