

vertically over the centre of its base, would stand perpendicularly over some point to the south-east of that centre, and the pyramid itself would have its sides facing the south and the east, more highly inclined to the horizon than those towards the north and west.

(264.) Whatever conception we may form of the manner in which the particles of a crystal cohere and form masses, it is next to impossible to divest ourselves of the idea of a determinate figure common to them all. Any other supposition, indeed, would be incompatible with that exact similarity in all other respects which the phenomena of chemistry may be considered as having demonstrated. However, it must be borne in mind that this idea, plausible as it may appear, is yet in some degree hypothetical, and that the laws of crystallography, as determined from inductive observation, are quite independent of any supposition of the kind, or even of the existence of such things as ultimate particles or atoms at all.

(265.) Still, that peculiar internal constitution of solid bodies, whatever it be, which is indicated by the assumption of determinate figures, by their splitting easier in some directions than in others, and by their presenting glittering plane surfaces when broken into fragments, cannot but have an important influence on all their relations to external agents, as well as to their internal movements and the mutual actions of their parts on one another. Accordingly, the division of bodies into crystallized and uncrystallized, or imperfectly crystallized, is one of the most universal importance: and almost all the phenomena produced by those more intimate natural causes which act within small limits, and, as it were, on the immediate mechanism of solid substances, are remarkably modified by their crystalline structure. Thus, in transparent solids, the course taken by the rays of light, in traversing them, as well as the properties impressed upon them in so doing, are intimately connected with this structure. The recent experiments of M. Savart, too, have proved that this is also the case with their power of resistance to external force, on which depends their