

chemical axes, and MM , mm , the equatorial or cohesive diameters; it is evident, that these two molecules may be supposed to combine in two ways, either E , to e , chemically; or M , to m , cohesively; but the cohesive combination, of course, is most probable, *from the similar nature of the molecules.** Every self-repulsive molecule of oxygen, therefore, as it exists in a state of gas, must consist of *at least* two molecules, united to each other *cohesively*, and acting as a single one. Whether the self-repulsive molecule of hydrogen be double or not, cannot be inferred from the composition of water, as above stated; but this may be demonstrated, from other compounds, into which hydrogen enters. Thus muriatic acid gas is composed of one volume of chlorine,

* The general and strong analogy, if not identity, in all respects except *direction*, between the axial and the equatorial forces, has been already alluded to, and is exemplified, by the striking resemblance, between electricity and magnetism. We have seen also, that in the crystallized state, similar molecules probably combine *chemically*. Hence, although the rule stated in the text be true, that *similar* molecules only combine *cohesively*; yet there may be, and probably are, instances in which they combine *chemically*. For the same reasons, *dissimilar* molecules may also occasionally combine *cohesively*. It is probable that such states of combination might be readily detected by the optical properties, or by some other peculiarity in the physical properties of bodies, if in a crystalline form; but by no other known means. Do not some of the phenomena of *Dimorphism*, that is to say, the property which the same body occasionally possesses of assuming different forms, depend upon these changes?