

pendent of their nature. Professor Michterlich is of opinion, that isomorphous elements, that is, elements having the same form, produce crystals which are similar. Dr. Prout maintains that the molecules of bodies are spheroidal, and are influenced by two kinds of polarizing forces, one acting in the direction of the axis, and the other in that of the equator. As the electric and magnetic forces have this relation to each other, he supposes them to be analogous to, if not identically the same, as the crystallizing forces. This theory may be supported by sound and legitimate arguments.

CHYMICAL ATTRACTION.

If the particles of matter were acted upon by no other force than that of cohesion, all substances would be equally ready to combine with each other. But it is universally known that there are some substances, such as oil and water, which cannot be mixed together. It is, then, to be determined, why some compounds readily unite, and others refuse to combine. A force, called affinity or chymical attraction, altogether distinct from that of cohesion, does exist, and to this may be attributed the choice of substances with which to combine, evinced by all the elementary principles. A knowledge of the circumstances under which this force acts is essential to the chymist, for by it he regulates all his operations; and it is not less necessary to him who confines his attention to the operations of nature, for it explains all the varied forms he observes in mineral substances.

Affinity is a force which acts upon ultimate particles, causing different elements to unite and produce substances having properties more or less unlike those which distinguished the original principles. From this definition it might be imagined that the sphere of attraction is small, and, in fact, it only acts when the particles are in apparent contact, every cause that separates them having consequently a tendency to prevent the operation of chymical attraction.

Cohesion is a force which opposes and prevents the operation of affinity, and this it does by preventing the particles from having a contact with each other. Bodies seldom act chymically upon each other in a solid state, for their particles cannot be brought sufficiently near for the operation of that attraction which they may have. But, reduce them to a liquid form, that is to say, destroy the cohesion, and the affin-