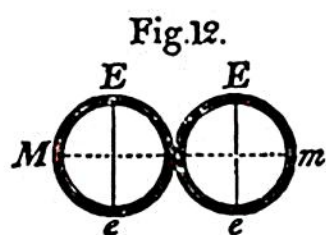


passing into two energies, if not identical with, at least operating in the same way, as those of electricity. We may suppose, therefore, that the 140 degrees of heat which disappear during the melting of the ice, are converted, in some unknown manner, into the two polarizing energies; and that the energies, thus produced, are superadded to the energies already existing attached to the molecules of water, the total quantity, or intensity, of the molecular energies of which, are increased by such additions. The changes effected in the relative position of the chemical axes of the molecules of ice, during its conversion into water, by the increase of the polarizing energies arising from the added heat, may be thus illustrated: let Fig. 12, represent



two molecules of ice, having their chemical axes parallel, and the similar poles of these axes in the same direction, in which they were represented in

Fig. 10 and Fig. 11. In such a position of the chemical axes, their similar poles E , E , and e , e , are of course mutually repellant, though in a low degree; and the cohesive attraction between the two molecules, predominates. Now suppose the repulsive intensity of the similar poles, E , E , and e , e , to be so much increased, as to extend beyond the semi-diameters of the molecules. Such an increase of