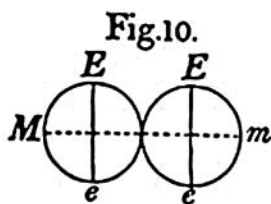


ferent; not only from those of electricity and magnetism, but from all others with which we are acquainted: while electricity and magnetism themselves, as we know them, may be nothing more, than the effects of these elementary forces, upon the subtle matters, of which the electric and magnetic molecules are composed.*

Of the Effects of Heat.—One of the most general effects of heat, is the *increase of volume* which it produces, in all bodies in which it is accumulated. There are a few exceptions to this law; and one of so important a character as to require especial notice hereafter. In the mean time, however, the generality of the law may be taken for granted; and its mode of operation on the molecules of bodies, may be illustrated in the following man-



ner: † As before, let us suppose Fig. 10 to represent two molecules of ice, in which the chemical axes, *E e*, *E e*, are parallel, and the similar poles of these axes are in the same direction. In this position of the chemical axes, the similar poles of these axes will be repulsive; but their repulsive effects are supposed to be limited, and nearly quiescent.

* See Appendix.

† The general reader will observe, that the molecules of heat are vastly less than those of any ponderable substance; otherwise the effects ascribed to them, could not, of course, be imagined to take place.