

out which they become brittle : even iron, although the most robust, is brittle like the rest. Thus the ductility of one metal, and the extent of continuity which it can support, depend not only on its density and fusibility, but also on the manner and space in which it is treated, and of the addition of heat or fire which is properly given to it.

II. By comparing those substances which we term *semi-metals* and *metallic minerals*, which want ductility, we shall perceive, that the order of their density is emery, zinc, antimony and bismuth, and that in which they receive and lose heat, is antimony, bismuth, zinc, and emery ; and which does not in any measure follow the order of their density, but rather that of their fusibility. Emery, which is a ferruginous mineral, although as dense again as bismuth, retains heat longer. Zinc, which is lighter than antimony or bismuth, retains heat longer than either. Antimony and bismuth, receive and keep it nearly alike. There are, therefore, semi-metals, and metallic minerals, which, like metals, receive and lose heat nearly in the same relation as their fusibility, and partake very little of their density. But by joining the six metals, and the four semi-metals, or metallic minerals, which I have  
tried,