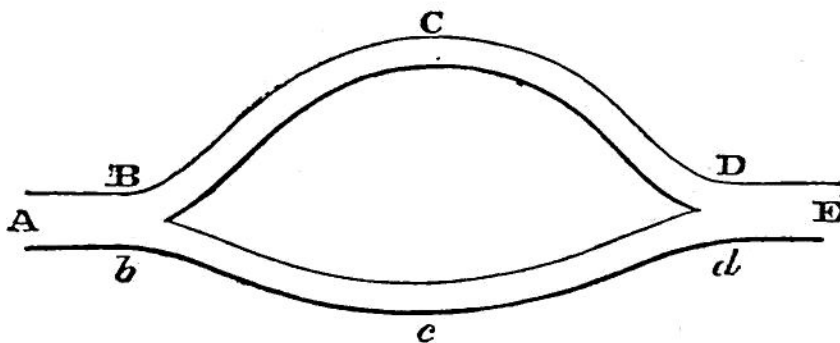


meable to another, differing but little in frequency. Now it is sufficient for our present purpose if, without pretending to analyze the actual structure of any optical medium, we can indicate structures and combinations in which air, in lieu of the æther, is the undulating medium, and which shall be either incapable of transmitting a musical sound of a given pitch, or shall transmit it much less readily than sounds of any other pitch, even those nearly adjacent to it. For that which experiment, or theory so well grounded as to be equally convincing with experiment, shows to be possible in the case of musical sounds, will hardly be denied to have its analogue or representative among the phænomena of colour, when referred to the vibrations of an æther.

(9.) An example of an acoustic combination, or compound vibrating system, incapable of transmitting a



musical sound of a given pitch, is furnished by the pipe A E, which, after proceeding singly a certain length A B, at B branches off into two equal and symmetrically disposed pipes B C and *b c*, which reunite again at D *d*, and there again constitute a single pipe D E, whose direction