the great aerial currents formerly described as pervading the atmosphere, are scarcely affected by the vapour they contain.

When two portions of vapour, having different temperatures, are mingled together; or when a portion of vapour is brought into a state of mixture or contact, with a portion of water, or with any other body colder than the vapour; *the resulting mean temperature*, whatever that may be, is, in both cases, the temperature which regulates the elastic force of the mixture. Now, since the elastic force of vapour increases most rapidly from the temperature of 32° to 212°, the increase being in a geometrical progression; while the increase of the temperature is in an arithmetical progression; it follows, that when two portions of vapour, of equal bulk, but of different temperatures, are mixed together; or when a portion of vapour is brought into contact with any solid colder body; the resulting mean temperature is always *below* that requisite to preserve the water in a state of vapour. Hence, such mixture or contact is always followed by a portion of the vapour being condensed into water. In a future part of this section, it will be necessary to illustrate further this important fact; but a familiar instance may be noticed here. Let us suppose that a pound of water at the temperature of 212°, which being in a state of steam would occupy a space of