

The errors to which a minimum, in common with other spirit thermometers, is subject from the evaporation of the spirit, must be provided against as explained in Art. 76; but before jerking down the detached portions of spirit, the index must be suffered to slide down to the bulb. It will assist the re-union of the spirit, if the thermometer be afterwards suffered to remain for a few hours suspended in a vertical position, bulb downwards.

SECTION III.

ON THE DETERMINATION OF THE TEMPERATURE OF THE AIR AND THE MODE OF EXPOSING AND READING THERMOMETERS.

(80) Temperature of the Air Defined.—By the temperature of the air at a station at any time, is to be understood the temperature of such air as may be taken as a fair average sample, as respects temperature, of the air in the neighbourhood at that time, within a few feet above the ground. It is a matter of primary importance that the air near the thermometers be not *stagnant*; as such stagnant air is likely to have the temperature which the air in the neighbourhood had at some *previous* time, and not the temperature at the *actual* time of observation. It is desirable therefore that thermometers be suspended at a distance from any building, so as to be freely exposed to every wind.

(81) Thermometer Screen.—Supposing the thermometers to be placed in the air whose temperature it is desired to know, it is further necessary that they be so exposed as to take up the temperature of the air by contact with that air, while they are guarded from being heated or cooled by interchange of heat through radiation with the ground and other surrounding objects (which are liable to be warmer or colder than the air), or by parting with heat by radiation to the sky.

This is effected to a great extent, although not perfectly, by suspending the thermometers in a *screen*, which is a rectangular case formed on its four sides and bottom by thin louvre slats of sheet iron, which intercept heat rays, but freely admit air. The top is close, to guard against drifting snow which might possibly settle on it, and drop on the thermometers as it melts.

The thermometers are attached to a frame formed of two strips of hoop iron stretched from end to end between the front and back of the screen. The ordinary mercurial thermometers are fastened to brass bows, the ends of which project forward, while the middle of the bows are screwed to the horizontal frame. The self-registering thermometers