

liquid and slightly compressed air. A small steel index, with a hair tied round it to act as a spring and maintain the index in any position which it may assume, lies free in the tube among the creosote at either end of the column of mercury. This thermometer gives its indications solely by the contraction and expansion of the liquid in the large full bulb, and is consequently liable to some slight error from the effect of variations of temperature upon the liquids in other parts of the tube. When the liquid in the large bulb expands, the column of mercury is driven upwards towards the half-empty bulb, and the limb of the tube in which it rises is graduated from below upwards for increasing heat. When the liquid contracts in the bulb, the column of mercury falls in this limb, but rises in the limb terminating in the full bulb, which is graduated from above downwards. When the thermometer is going to be used the steel indices are drawn down in each limb of the tube by a strong magnet, till they rest on each side on the surface of the mercury. When the thermometer is brought up, the height at which the lower end of the index stands in each tube indicates the limit to which the index has been driven by the mercury, the extreme of heat or cold to which the instrument has been exposed.

Unfortunately, the accuracy of the ordinary Six's thermometer cannot be depended upon beyond a very limited depth, for the glass of the bulb which contains the expanding fluid yields to the pressure of the water, and, compressing the contained fluid, gives an indication higher than is due to temperature alone. This cause of error is not con-