

found to rank superior to either of the above mentioned fluids. Mercury was found to answer best, for the reason that it is the most sensible fluid to heat and cold, even air not excepted, and of all liquids this is the most easily freed from air. Count Rumford discovered that mercury was heated from the freezing to the boiling point in 58, water in 153, and air in 617 seconds.

The thermometer consists of a glass tube, at the bottom of which there is a bulb, which is generally of a spherical form; in this mercury or quicksilver is placed, and the atmosphere affecting this, causes it to rise or fall in the tube. In order to mark the rising of the atmosphere, a scale of figures is marked along the tube, and by this simple way we can always discern the temperature of the air which we are at any moment breathing. At first great difficulty was experienced in order to obtain the proper scale. In the present scale of figures, 32 is marked at the freezing point, when water congeals; when the quicksilver falls to 0, it is said to be at zero; and then, as a matter of course, the further the mercury descends below this point, the more intense is the cold. In our rigorous climate the thermometer very frequently ranges as low as 30 below zero; however, in Great Britain the cold is never so intense. When the quicksilver is at 60, the air is said to be temperate, and now when we are experiencing this intense cold, we ought to be careful that the mercury of the thermometer in our room is never above this point, as nothing is more hurtful to the constitution than to sit in too warm a chamber. When the mercury rises as far as 98, it is the heat of the blood in the average of living men, and 212 is the point when water boils.

The simplest mode of filling a mercurial thermometer is to put the mercury in a paper funnel, tied round the top of the tube. This must be done very cautiously, by alternately heating gently and then cooling the bulb, and at last making it boil in such a manner as to completely expel the air. To close the extremity of the bulb, it is first softened by heat, and drawn to a capillary surface. Then, in order to free the tube entirely from air, the bulb is heated intensely, and whilst in that state, the mercury filling the whole tube, the capillary point is to be heated in the flame of a lamp.

The thermometers used now are Fahrenheit's in Britain, Holland, and America; Reaumur's in France; and Celsius's in Sweden.