



the angle between dry and wet bulb lines. For all points on this equal comfort line the dry bulb and wet bulb temperatures are of equal importance in determining comfort. Below this equal comfort line, dry bulb temperatures are of greater importance while above this line, wet bulb temperature is the chief factor in determining comfort.

Referring again to Curve B, Fig. 59, and extrapolating beyond the limits of the experimental data, it is found that the angle between wet bulb and equal comfort lines becomes zero at 132 deg. wet bulb. Therefore at this temperature the wet bulb lines are also equal comfort lines, or comfort depends upon wet bulb temperature alone. This could not be verified by test for the reason that it is impossible for the investigators to endure the conditions long enough to determine lines above 115 deg. saturated.

Below 32 deg. a marked reversal in the direction of the equal comfort lines occurs. Therefore for such conditions the higher the wet bulb temperature or relative humidity the greater the cooling effect of the air. This fact while not generally accepted receives ample verification from the experience of people who have dwelt in cold climates.

Below 62 deg. the angle between the equal comfort lines and the dry bulb lines diminishes rapidly, approaching zero at 32 deg. For all points on the 32 deg. equal comfort line, comfort is independent of wet bulb temperature or relative humidity.

It has already been shown that neither the wet bulb nor the dry bulb temperature alone indicates a person's feeling of warmth. The equal comfort lines do give such an index. For example, if one passes from any point on the equal comfort line intersecting the saturation curve at 90 deg. to any point on the equal comfort line intersecting the saturation curve at 91 deg., an equal increase in warmth will be noticed, regardless of the path followed. This series of equal comfort lines can therefore be thought of as a temperature scale which, unlike the wet bulb and dry bulb scale, determines accurately the feeling of warmth. The best way to fix the numerical value of the new scale is to adopt the value common to all scales at their intersection on the saturation curve.

As has already been said and will be further verified, this temperature scale accurately indicates one's feeling of warmth and determines the physiological reactions of the body. In other words, it entirely determines the effects produced upon the body. It may therefore be called a scale of effective temperature.

To further emphasize the importance of effective temperature over the wet bulb temperature in determining comfort, some experimental facts are graphically shown on the psychrometric chart Fig. 61. This data is taken from a report of an investigation of the physiological reactions of men to high temperatures, made by the AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS Laboratory in cooperation with the U. S. Public Health Service and the U. S. Bureau of Mines. (Some Physiological Reactions to High Temperatures and Humidities, A. S. H. V. E. JOURNAL, March, 1923.