A Science Service Feature

Released upon receipt
but intended for use
August 26, 1929.

? WHY THE WEATHER ? Mailed August 19, 1929.

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"TWENTY DEGREES COOLER INSIDE."

The air-conditioning apparatus used for cooling theatres can be used with discretion or otherwise. One of the leading firms manufacturing such equipment says it is the fault of the theatre managers that the cooling is so often overdone.

A person in normal health, dressed seasonably and sitting quietly in a theatre, experiences a temperature sensation that is dependent upon four things; viz, the temperature of the air (measured by a dry-bulb thermometer), the relative humidity (obtainable from readings of the dry-bulb and wet-bulb thermometers), the movement of the air, and acclimatization. The slight movement of the air incident to ventilation is relatively unimportant. Acclimatization means, in this connection, the adjustment of the body, before entering the theatre, to the conditions prevailing outside. Because of this adjustment, indoor conditions should be varied according to the temperature outdoors. The firm above mentioned says on this point:

"The dry-bulb temperature and the relative humidity that result in summer comfort are higher than those of winter, due partly to acclimatization and partly to the lighter clothing customarily worn in summer. The indoor summer comfort conditions bear a definite relation to the outdoor conditions and vary with them. This is true because the person must be protected from shock, upon entering or leaving the indoor conditions, and from the condensation of the moisture in the air trapped between the clothing and the body, which would occur were the indoor conditions too 'low' as compared with those outdoors."

The same concern recommends certain combinations of dry-bulb and wet-bulb temperature for each outdoor temperature. When the mercury soars to 95 degrees on the street, a combination of 80 degrees dry-bulb and 65.2 degrees wet-bulb is said to be ideal inside, but in no case is there justification for making the building "20 degrees cooler inside", as measured by the dry-bulb thermometer. On a cool summer day it may be advisable to keep the dry-bulb temperature indoors higher than the temperature of the street.

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Washington, D.C.