

METEOROLOGY

Temperature and Humidity Recorded by Same Instrument

NEXT summer, when some gaffer pulls that old one about "not the heat but the humidity," there will be scientific means of accurately checking him up, thanks to a new instrument invented by Athelstan F. Spilhaus of the Massachusetts Institute of Technology. (*Bulletin Am. Meteorological Society*, Feb. 23).

Mr. Spilhaus calls his device an "air mass indicator," but for everyday purposes it might well be christened a "comfortometer." It combines a thermometer to measure the temperature with a hygrometer to measure the humidity of the air, in such a way that a single pointer can tell you whether you have a right to be uncomfortable or not.

The new instrument was designed to face the universally known fact that humidity does have a lot to do with how hot or how cold it feels. As everybody has experienced many times, a hot, dry day is more tolerable than a hot, muggy one, because if there is little moisture in the air, perspiration evaporates readily, producing a cooling effect. A straight thermometer reading therefore means little, but combined properly with a humidity reading it has significance.

Pointer and Dial Both Move

Mr. Spilhaus has succeeded in doing this by having a pointer, which indicates humidity, move over a dial which itself moves to indicate temperature. The dial is of a rather thick crescent shape, and is pivoted at one end. Attached to it is a strip made of two metals that expand unequally when heated, and must therefore bend, thus causing the dial to move up and down. The humidity-indicating pointer is attached to hairs that lengthen in moist air and shorten in dry, causing it to travel back and forth over the dial.

There are two kinds of dials. One, for scientists, is marked with symbols understood by initiates in the mysteries of meteorology. The other, for everybody's use, bears such everyday terms as raw, keen, damp, dry, muggy, scorching, heat prostration. There is also a blessed "island of comfort" in the middle—though it looks discouragingly small as compared with the "sea of

troubles" with which it is surrounded. However, at least for indoor use in really modern buildings, the air-conditioning engineer can see to it that the pointer does not stray off that "island."

The instrument can also be used as an ice warning indicator for aircraft. Ice formation on the wings and other surfaces of airplanes is a serious problem, but hitherto pilots have had no instrument to check by, other than a thermometer. But subfreezing temperatures are not dangerous unless the accompanying relative humidity is nearly 100 per cent. With an air mass indicator substituted for the thermometer, the pilot can tell at a glance whether it is time to begin worrying about ice on the wings.

Mr. Spilhaus emphasizes the fact

that his instrument is not intended for use in forecasting weather. It is designed solely to give a more accurate and significant reading of the weather of right now.

Science News Letter, March 16, 1935

ASTRONOMY

Brightness of Meteors Studied by Harvard

WHETHER the brightness of a meteor is due to the size of the shooting star as it plunges through our atmosphere or to the speed with which it is travelling, should be known shortly as a result of investigations now in progress at the Harvard College Astronomical Observatory.

Observations are to be made under the direction of Fletcher Watson, assistant in astronomy, of each of the meteor showers that occur at intervals throughout the year. The principal ones occur approximately on April 22, May 25, July 29, Aug. 12, Nov. 17, and Dec. 12.

Science News Letter, March 16, 1935



"COMFORTOMETER"

A new weather-reading instrument on which a moving pointer, gliding over a dial that also moves, tells what atmospheric conditions are in everyday terms of human comfort—or discomfort. Its inventor, Athelstan F. Spilhaus of the Massachusetts Institute of Technology, holds the instrument, which indicates both heat and humidity. The insert shows close-up of dial, giving positions for raw, keen, dry and damp weather.