LAST DAY OF A HOT SPELL

The last day of a hot spell is usually the hardest to endure, for in addition to the cumulative effects of hot weather the temperature and humidity are highest, and the wind is weakest. The atmospheric pressure is about at its lowest, which is the chief reason why the breeze which started the hot wave has died down. Much suffering results, for to any one in a perspiration a good wind of fifteen miles an hour is nearly twice as cooling as a light breeze of but four.

On such days cities like Boston, where the wind is off-shore, get much hotter than the interior. A place near sea-level is usually warmer than one at even a moderate elevation. Furthermore, the very presence of the cool ocean near by becomes a liability rather than an asset, as the land wind weakens. The overflow of some of the expanded air from the heated land to the cool water increases the pressure just off-shore while it decreases it just inland. The resulting tendency for a sea-breeze to set in just balances the pressure gradient causing the general breeze from the land, bringing about a dead calm when the sweltering heat is most intense. But by nightfall the sea-breeze may conquer the waning land wind, and bring a welcome but dangerous chilling to the overheated people.

HAIL IS HOT WEATHER'S ICE

Hail is a phenomenon of spring and early summer in the South, and of spring and summer in the North. It is a feature of intense thunderstorms, and consequently occurs in hot weather and practically never falls in winter. Sleet is an entirely different formation, being small and without layer structure. Only when the freezing temperatures are within reach of convection and the surface temperatures high do we have hail.

When convection is most violent, and air currents are ascending at the rate of 25 or 30 miles an hour, raindrops are caught in the uprushing air and carried high up into the cloudtops. These under such atmospheric conditions, tower into the regions of extreme cold, where the temperature is far below

freezing, and often even below zero. On mixing with snow they freeze as globules of cloudy ice. Getting into descending currents, out of the uprushes they fall into the rain levels, and take on a clear layer of ice from contacts with rising drops; then again the growing hail is tossed on high, to receive another coat of snowy ice. This process is sometimes kept up until on rare occasions stones with 25 layers and as big as baseballs result, such as those falling at Annapolis, Md., June 22, 1915.

When the upward wind gravity is permitted to work its will, then the hailstones fall to the earth, seldom doing greater damage than to cut up growing things, because the stones are small. But sometimes the great stones are a serious danger; they play havoc with crops, even to the point of complete ruin, destroy light structures and glass everywhere, and even kill cattle in the fields.

TIMING THUNDERSTORM'S ARRIVAL

When a thunderstorm is seen in the distance directly approaching, then the moment when the observer will feel the first gust of cool wind and the first big splashes of rain may be estimated quite closely. He must accept two averages, the one the height of the thundercloud base as one mile, the other the speed of travel as 25 miles an hour. These are close enough for ordinary purposes.

Hold a rule or pencil in the right hand, supported vertically between the thumb nail and the bend of the forefinger. Holding the pencil at full arm's length, keeping head erect, get someone to measure with a yardstick the distance from the eye to the pencil, which, with most adults, is between 20 and 24 inches.

When the thunderstorm comes into view hold out the pencil, and shift it up and down until the distance from itsupper end to the thumbnail covers the space between the base of the cloud and the horizon line, which, if the actual horizon is concealed, as it usually is in rolling or hilly country, may be