

THE WEATHER-TABLES IN THE NEWSPAPERS.

A LITTLE PAPER FOR LITTLE THINKERS.

MANY of our little folks know, probably, that our principal newspapers give daily a weather-table. It is the intention of this little paper to explain how these tables are to be read and interpreted.

Many may be inclined to ask what good the tables are, and what is the use of taking any notice of the weather at all, beyond taking an umbrella when it rains, or an overcoat when it is cold.

Now there is a great deal of use in keeping note of the kind of weather, for by this means we can connect the various changes with differences of temperature and air-pressure.

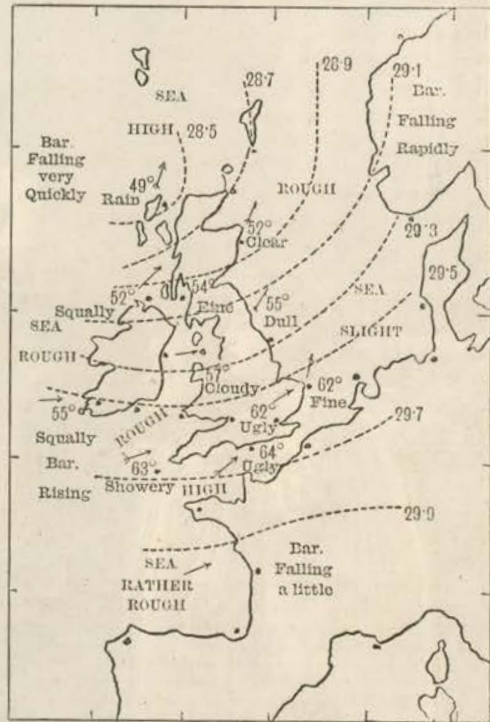
The astronomer foretells an eclipse, the time of high water, and the rise of the tides entirely from observations that have been made a good long time ago. We never think of doubting what the astronomer tells us to look for, because we always find that his predictions come to pass. If we observe the weather and the reasons of its variation for an equally long time, we may by-and-by, perhaps, be able to foretell something about it. We shall not, however, do so with the same reliable exactness, for it depends on conditions so different.

All the causes of change reside in the air, and they are moisture and wind. These causes depend on temperature, for a rise of temperature increases the amount of moisture that goes up by evaporation; it also heats the air and makes it lighter. Light air ascends; so that when the warmer air rises a colder stream sets in to fill the space left by the warmer: this causes a wind in that direction. This change of temperature is measured by the thermometer. The amount of moisture in the air also determines the air-pressure, and this we measure by the barometer.* The principal records, then, in our weather-tables are the height of the quicksilver column in the barometer, and the temperature in degrees in the thermometer.

We append the tables for the *Times*, *Daily Telegraph*, and *Daily News* for the same day; and just to show the importance of observing the weather, we give a telegram that was issued from New York on that day warning us of a storm, in order that we might be prepared for it:—"A storm centre is crossing the Atlantic, and will probably reach the British and French coasts by the 18th, preceded and attended by rains. Strong south-east and north-west winds and gales will prevail." When this telegram was received at our weather-office messages

were sent to all the principal places on our coasts—"Barometer falling rapidly in north-west. Wind rising. Hoist south cone. Sunday, 9.20 a.m." And sure enough the storm came. What a good thing it was for our shipping that the warning arrived before the storm. Another good thing was that we had electricity to bring the message faster than the storm could travel across the Atlantic.

If we look at these charts we see they all agree,



"THE TIMES" CHART.

and the barometer shows a sudden and a great fall. In the *Times* chart, which gives us a map of the British isles and the surrounding sea, with the western coast of the continent of Europe, we have a number of dotted lines, curving for the most part towards the northern part of the map. These mark the height of the quicksilver in the barometer at the places through which they pass, and as they connect all places having the same barometric pressure they are called *isobars*. The numbers attached to the lines show the height in inches at 6 p.m. of that day. The lowest isobar in the map shows that the height is 29.9, or very nearly thirty inches, which

* A paper explaining "Why the Barometer Rises and Falls" was published in the number of LITTLE FOLKS for July, 1877.

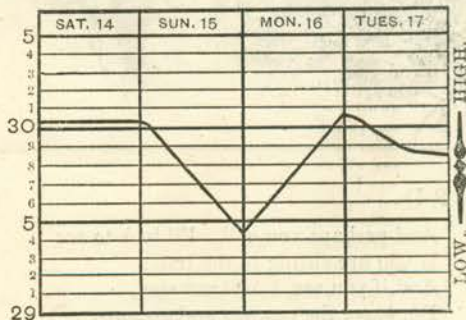
is fairly high ; the next shows 29·7 ; and so on, till the last shows a height of only 28·5 inches, a decided indication of very stormy weather.

We see by the lines that the decrease of pressure is much greater on the north and west coasts than on the south and east ; this points the direction in which the storm is travelling, for it always follows the line of *decrease* of pressure. The note in the corner says the "barometer is falling very quickly," while at the southern it is rising. At one glance the height of the barometer is seen all over the district, and the unsettled state of the weather judged of accordingly. The direction of the wind, which is shown by the arrows, differs very little from the isobaric lines themselves. In Ireland they point eastward—*i.e.*, they are blown by a west wind, for they are supposed to fly with the wind. As they reach the eastern coast of England they change their direction and run to the north, showing that the wind is more from the south, so that across the North Sea the wind is a south-wester, and blowing strongly. As the air-pressure becomes less the wind becomes stronger, and follows very nearly the same direction.

In the west the lines are closer together ; this shows that the winds are much stronger in that locality.

The storm was felt in its fury in the north of Scotland at one o'clock in the morning, but further south it was not felt till noon. In the west the sea is much higher and rougher than in the east.

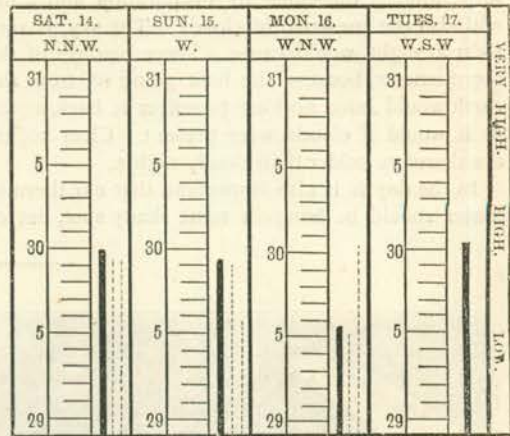
Let us refer to the barometer charts of the *Daily Telegraph* and the *Daily News*. See in that same Sunday what a heavy fall there is ; the heavy black line marks it in the former, the heavy black upright lines in the latter. In these charts the inches are



THE "DAILY TELEGRAPH" CHART.

divided into tenths, which can be read off on either side. These are not so complete as those of the *Times*, for they simply refer to the barometric indications of London and its neighbourhood. The *Telegraph* shows the lowest point reached by the barometer was at midnight, Sunday, that its fall of

more than half an inch—from 30·05 to 29·45—took place within the twenty-four hours ; while the *Daily News* records, by means of the dotted lines, the highest and lowest points registered within the



THE "DAILY NEWS" CHART.

twenty-four hours. These barometric readings are reduced to sea-level ; this is necessary, if we are to compare them, for if a barometer is situated at any great height above the earth's surface, part of the air is left below, and consequently the pressure on the quicksilver is less. For instance, a barometer that registered 30 inches in St. Paul's Churchyard would only register 29½ inches if carried to the top of the dome or to Shooter's Hill. Even if carried from the lower storey of a house to the upper a difference will be marked. Whenever there is a sudden fall, as is registered in our charts for the day we have mentioned, a storm of wind or rain, or both, may be with certainty expected, and very quickly too ; when it falls slowly, bad weather or wind which will last some days may be looked for ; when it rises slowly the reverse may be expected—that is, fine weather and a continuance of it. The notes which are attached to the charts of the *Daily Telegraph* and *Daily News* give in report what the *Times* gives graphically by means of its map.

The *Times'* chart gives in addition a temperature table, so that along these isobaric lines we have also a number telling us the thermometric register. Thus, on the line 29·7 the temperature is marked at 63°, while on that of 28·5 the temperature registered is only 48° ; this lower temperature is that of the stormy quarter.

In the *Standard*, instead of the graphic chart, we have a very carefully-compiled table, which gives the same amount of information, with the addition of the lowest and the highest temperatures, so that

the range of the thermometer during the twenty-four hours is at once seen by subtracting the lowest from the highest temperature.

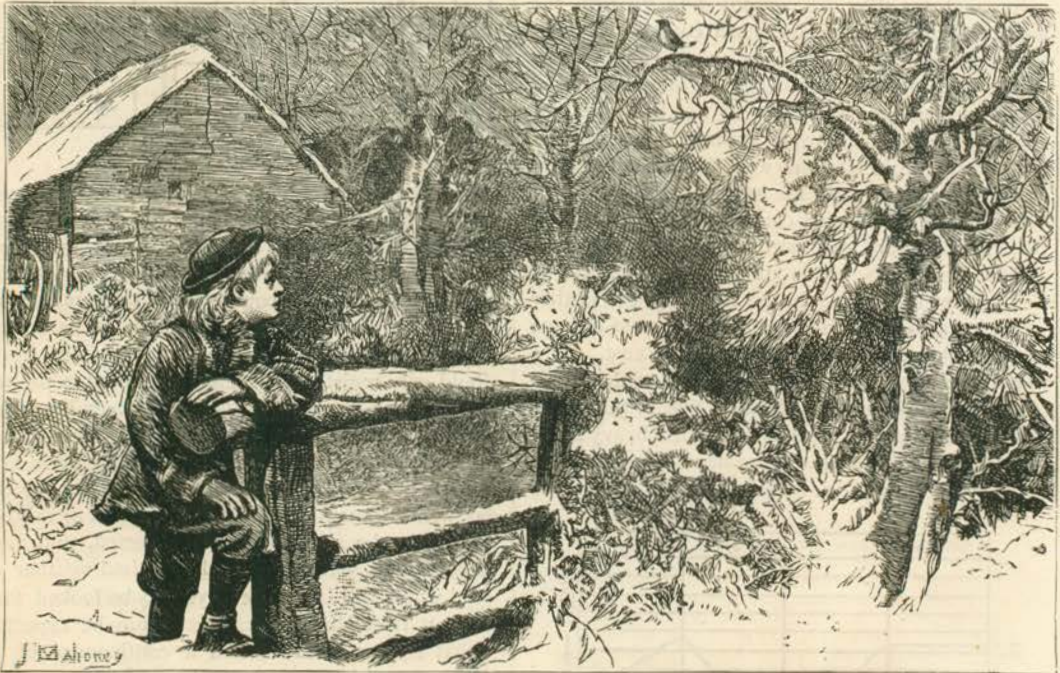
There are several things which reduce temperature; among the chief are evaporation and wind, and also the presence of clouds. The sky, if very clear at night, would cause a lower reading of the thermometer, because the heat going off from the earth would have nothing to reflect it back again, as it would if clouds were present. Clear nights are therefore colder than cloudy nights.

In the day it is also important that our thermometer should be hung in some shady spot, out of

the way of the direct sunshine, for the latter would not enable us to register the general temperature, but it would only note that of a special spot.

Here our chat for the present must end. We hope enough has been said to show our little folks the value of the weather tables in our daily papers. If any should have the means at hand of studying how the quicksilver in a barometer rises and falls every day, or how the thermometer is affected on a hot or cold day, we know they will find it an interesting as it is sure to prove a profitable use to which they can put a few minutes every day.

J. A. B.



TO A BIRD.

THE little bird upon the tree
Has nothing now to say to me;
He does not meet me with a song,
But silent as I pass along,
He turns his head, as he would say,
"It is too cold to sing to-day."

And I would say, but have no words
To talk with little bits of birds—
"If you'll come round to-morrow morn,
When I give my young chicks their corn,
I'll put some seeds and crumbs of bread
For you upon the chickens' shed."

And perhaps you will. I'll look to see
If you are sitting in the tree;
And if you are, I will not stay,
But leave the crumbs and go away;
You'd think, if I stayed by the rail,
I'd salt to put upon your tail.

And if you saw the cage I've bought,
I think you'd perhaps like to be caught;
But I've a bigger bird than you,
A coloured one, a cockatoo.
So if you think you'd like the bread,
I'll leave it for you on the shed.