

CALMS & STORMS OF WINTER—THE WEATHER WHIRLIGIG ON THE WORLD MAP

JANUARY is the month of winds and storms, and winds, though not now necessary for navigation, are still of importance, for they make weather, and on the weather depends a country's prosperity.

Winds are caused by variations in the pressure of the atmosphere due to differences in temperature and moisture, and to understand them we should study a kettle of water on the fire. As the water nearest to the bottom gets warm, it also gets lighter, and rises, whereupon the colder water rushes in to take its place.

How the Winds are Caused

So it is with the winds. The air absorbs about seven-tenths of the heat the sun sends, and as the air nearest the earth is warmest, it rises, and cooler air from another part, where the earth has given up less heat, rushes in, and so a wind is caused.

In a general way we notice only the current of air that travels horizontally just above the earth's surface, but sometimes we may look up and see the clouds travelling in the opposite direction, and notice the return current of warmer air. At the place where the warm air rises there is no horizontal movement, and

we say the region is one of calms, or, as sailors call it, doldrums, a word meaning stupid. Though there are no permanent winds in these calm belts there are light winds from time to time.

Currents of Air and Water

There are two kinds of winds—those fairly regular in direction and force, and those changing with the seasons.

Of the first group, the trade winds are the best known, and they received their name because of their importance to traffic in the days of sailing ships. They blow from the colder regions of the north and south towards the equator; but as the earth is whirling round they get left behind, to some extent, or are deflected, just as, when we try to walk down a railway carriage when it is going round a curve, we are thrown to the side.

Instead of blowing due north and south, therefore, the trade winds blow from the north-east and from the south-east. [Though ocean currents are named from the direction towards which they are travelling, winds are named from the direction from which they blow.]

Over the sea the trade winds blow with great regularity of direction and force, but when they get to land they

are deflected and slowed down in various ways by the irregularities of the surface. We are able to make wind maps because for many years millions of observations have been made in all parts of the world.

To the north of the trade winds in the northern hemisphere, and to the south in the southern hemisphere, there are westerly winds, which are fairly regular. In the south, the westerlies are called the brave west winds, in the manner of the old sailors who used the word brave as meaning strong.

Pathos of the Winds

Between the westerlies and the trade winds in both hemispheres is a calm belt, called in the north the Horse Latitudes, because in old times, when ships were long becalmed, they often had to throw their horses overboard for want of food. What a pathos there is in these names! The westerly winds are stronger in winter than in summer because the differences of temperature between the equator and the poles are greater then. In addition to the constant winds there are, in the Indian Ocean and China Seas, variable winds known as monsoons, a word meaning season. The enormous elevated land mass of Asia here inter-

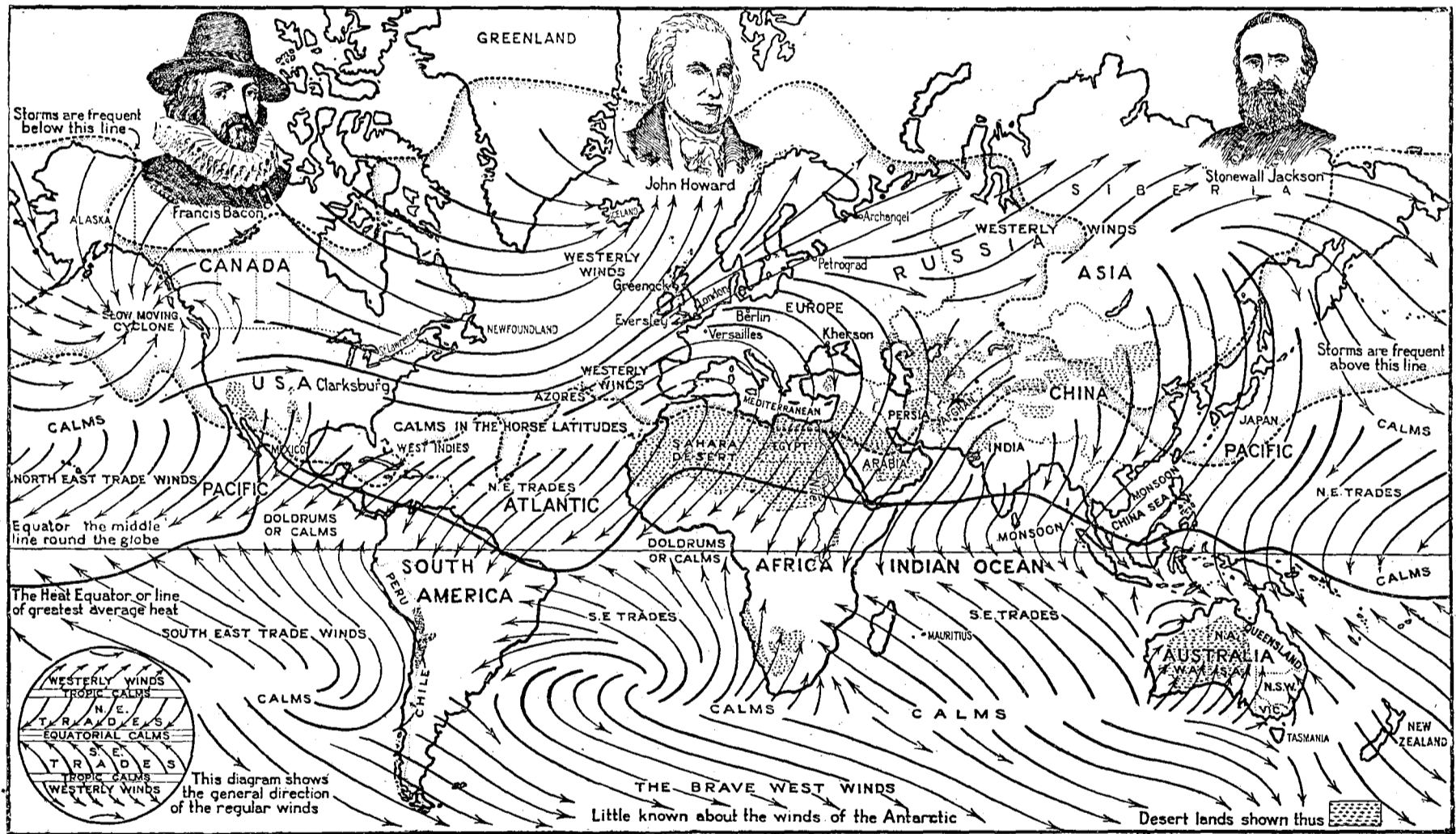
posing causes differences in the summer and winter temperatures that make the winds change their direction.

Just now, as North Australia is hot, the air rises, and cooler air is drawn in from cold Central Asia. In July the process will be reversed.

Why the Deserts are in Belts

The fearful cyclones of America and the Indian Ocean are caused by a small region developing a low-pressure atmosphere. At once air rushes in from all round, and as the earth's rotation deflects this all in one direction, a whirlpool is set up with disastrous consequences. The cyclones mentioned in weather reports are quite different, being slow whirling movements of westerly winds over large areas.

Knowing the direction of the winds, we can understand why the world's deserts are in two definite belts, as shown on our World Map. In the northern hemisphere the deserts of Asia, Africa, and America are caused by the dry northerly winds blowing across them and taking up any moisture they have; and in the south the deserts of Australia, South Africa, Chile, and Peru, are caused by the southerly winds



PICTURE-NEWS MAP OF THE WORLD SHOWING HOW THE WINDS BLOW AND MAKE TWO GREAT DESERT BELTS ACROSS THE WORLD

ESKIMO'S WHITE HOUSE

Good-bye to the Igloo?

The housing problem has reached the Eskimos on the island sealing stations of the Behring Sea.

The United States Government is said to contemplate building concrete huts to take the place of the igloos, the snow houses in which Eskimos have lived from time immemorial, of which we gave pictures last week.

The snow house is liable to many inconveniences. It melts into dampness if it does not melt away, and it is liable to be blown over by icy hurricanes. Concrete houses would be much better, if only the Eskimos think them better.

THE TRAFFIC PROBLEM

A Central Station Unworkable

We gave a week or two ago an outline of the scheme by Mr. A. W. Gattie for centralising the railway goods traffic of London, so that there should be one clearing house instead of 74 goods stations.

A committee of inquiry has now considered the scheme and rejected it, because, though it is ingenious, it would be too costly, would displace a large population, would prove unworkable, and would not make unnecessary the existing goods stations.

The cost would probably run into several hundred millions of pounds.

TIME-TABLE OF THE SEA

Predicting the Tides

A new instrument has been invented by a Glasgow firm of engineers by which port authorities can predict tides, and know when big ships can enter a harbour.

Tides, the height to which the sea rises, vary very much, and some method of being able to know their precise movements has long been needed. The new instrument measures the time and extent of the tides, and draws a curve on a revolving drum, showing these details on a chart. The machine makes it possible, with the help of tide measurements taken during previous years, to predict the level of water for any day.

THE GOLDEN ROCKS

Sixty Mile Reef in Australia

Whenever there is a rumour that more gold has been found in the earth's crust there is a rush of people towards the place with the hope of becoming rich.

It would not be surprising if there were now a fresh rush to Western Australia, for it is said that a gold-bearing reef of rocks, sixty miles long, has been discovered there.

It is a waterless, unattractive land where the gold is supposed to be, but that will not prevent the gold-seekers from braving the hardships of the search; and much money will be lost in the attempt to get more.