

remained half an hour in the bowl it came out, and was found to have absorbed nearly half its own weight in water.

The geographical distribution of tree frogs over the globe gives to America the majority of species known to exist, for of 64 species described, no less than 37 are found on our continent,—and, of the remainder, one is found in Southern Europe; five are peculiar to Africa; eight to Asia, and ten to Australia and the Indian Archipelago.

The Hylodidæ, of which our Pickering's Hylodes is a member, are peculiar to the American continent and West Indian islands, and of this family eight species are known to science. I may remark that the Hylodes differs from the Hyla in having the fingers free while the latter has them more or less webbed generally, though not always. The toes in the Hylodes are free, while in the Hyla they are, with the exception of one species, broadly webbed. In the Hylodes also the disks are small, while in the Hyla they are very conspicuous.

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CRUDE NOTES ON STORMS, AND HOW TO NOTE THEM.

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If the equator be considered a region of heat and moisture, and the poles of the earth regions of atmospheric condensation, precipitation, and frost, the 90° which separate these parts of the earth must necessarily be subject to various conditions of temperature, arising not only from change of seasons, but, in particular, from the direction of the wind; for, as all winds from equatorial regions are warm winds, rarified by heat, and charged with evaporation, so all winds proceeding from either of the poles, will be cold winds, comparatively devoid of heat and moisture. Consequently, a Barometer, placed in any intermediate latitude, will *rise* when the condensed and heavier atmosphere of the polar regions approaches it, and vice versa, *fall*, when in contact with the rarified, moist, and lighter atmosphere from the regions of the equator.

Thus do the extremes of heat and cold govern the atmospheric circulation of the globe—the superabundant heat and moisture of the equator flowing towards the poles, and the dry, condensed atmosphere of the frozen regions overflowing towards the equator.

If we examine the lettering of the Barometer prepared under the instructions of the late Admiral Fitzroy for the use of our sea-going population, and which we may presume to represent his personal experience on this point, so far as the northern hemisphere is concerned, we find all the indications for a *rise* to be northerly, or what may be termed polar,—while on the opposite side the indications of a *fall* are entirely of a southern or tropical character, and accord precisely with the principles I have now endeavored to lay down. The lettering below this, extending to the bottom of the scale, is exceptional, purely cyclonic in character, and therefore not applicable to the ordinary currents of atmosphere which prevail in every quarter of the globe.

We are still imperfectly acquainted with the nature of the cyclone or revolving storm. That these storms are generated by heat, within certain parallels of latitude, extending around the entire globe, appears to be well authenticated. In the northern hemisphere this region may be said to extend from the 10th to the 20th degrees of latitude, and is separated from a similar zone in the southern hemisphere by the great equatorial belt of calms and constant rain.

Cyclones, in the northern hemisphere, revolve round their centre from right to left, while those of the southern hemisphere revolve in the opposite direction.

In the northern hemisphere these storms commence in the month of August, and certainly prevail in the North Atlantic till the middle of March, and there can be little doubt that the same rule holds good in other parts of the same hemisphere.

If a similar rule be applied south of the equator, where seasons are reversed, these storms would then commence in February, and be occasionally experienced to the middle of September.

All revolving storms move in a curvilinear course, at rates of speed varying from twenty miles an hour to ten, or even less. Those of the northern hemisphere first move in a west or north-westerly direction—then northerly, curving at or near latitude 30° to the north-east, and proceeding onward in that direction towards the pole. In the southern hemisphere these storms obey a similar law of nature, first moving towards the west and south-west, then southerly, curving in or near latitude 30° to the south-east, and so continuing their course to the frozen regions of the Antarctic.

During the prevalence of a cyclone the barometer will be found an invaluable guide. This wonderfully sensitive instrument will indicate by a fall of the mercurial column the moment a storm is in contact with it, and this fall will continue until the advancing moiety of the storm has passed by, or over, the instrument—the mercury then begins to rise, and continues to do so while the latter portion of the storm-circle is passing, when it will register the original atmospheric pressure, or nearly so, except it may be in the wake of the storm, where the disturbance will be great, and require a longer period to subside.

By carefully observing and noting the direction of the wind at the commencement and termination of a cyclone, two points will be established on the circumference of the storm-circle, and a line drawn through these points will show the position of the observer, from point to point as the storm swept over him. Another line drawn parallel to this chord, through the centre of the circle, will show the onward direction of the storm.

The direct speed and the diameter of a cyclone may be ascertained by noting the exact time which the storm takes in passing from one known locality to another, and its duration at either of these places. Thus, the cyclone which visited Turk's Island and New Providence in October, 1866, was 33 hours in passing from one island to the other, the distance traversed being 405 geographical miles, which is equal to a direct speed of 12 3-11 such miles per hour. If this rate of speed be multiplied by 16 hours, the duration of the cyclone at Turk's Island and at New Providence, we have 196 4-11 geographical miles as the diameter of the storm at that period of its existence. In passing over New Providence, the central calm of this cyclone lasted for one hour and thirty minutes, which, calculated by the same rule, would make the diameter of that centre 18 2-5 miles.

Should any one ask for my definition of an east or a west wind, I would answer, that all winds from these points may be considered lateral deviations of the polar currents, seeking, in obedience to the laws of gravitation, areas of lesser atmospheric pressure, and winding in their courses for thousands of miles, sometimes in one direction, and sometimes in another, like the waters of some great river on its journey to the ocean.—They have certainly no separate, distinct, or specific character; and the barometer heralds their approach like other winds.