

When the barometer is rather below its ordinary weight, say down to near 29½ inches (at the sea level), a rise foretells less wind, or a change in its direction towards the northward, or less wet; but when it has been very low, about 29 inches, the first rising usually precedes or indicates strong wind; at times heavy squalls from the north-westward, northward, or north-eastward,—after which violence a gradually rising glass foretells improving weather if the thermometer falls; but, if the warmth continue, probably the wind will back (shift against the sun's course), and more southerly, or south-westerly wind will follow, especially if the barometer rise is sudden.

The most dangerous shifts of wind, or the heaviest northerly gales, happen soon after the barometer first rises from a very low point; or, if the wind veers gradually, at some times afterwards.

Indications of approaching changes of weather and the direction and force of winds are shewn less by the height of the barometer than by its falling or rising. Nevertheless, a height of more than 30 (30.0) inches (at the level of the sea) is indicative of fine weather and moderate winds; except from east to north, occasionally.

The barometer is said to be falling when the mercury in the tube is sinking, at which time its upper surface is sometimes concave or hollow; or when the hand moves to the left. The barometer is rising when the mercurial column is lengthening; its upper surface being convex or rounded, or when the hand moves to the right.

A rapid rise of the barometer indicates unsettled weather; a slow movement the contrary; as likewise a steady barometer, which, when continued, and with dryness, foretells very fine weather.

A rapid and considerable fall is a sign of stormy weather and rain (or snow). Alternate rising and sinking indicates unsettled and threatening weather.

The greatest depressions of the barometer are with gales from S.E., S., or S.W.; the greatest elevations, with wind from N.W., N., or N.E., or with calm.

Though the barometer generally falls with a southerly, and rises with a northerly wind, the contrary sometimes occur; in which cases, the southerly wind is usually dry with fine weather, or the northerly wind is violent and accompanied by rain, snow or hail; perhaps with lightning.

When the barometer sinks considerably, much wind, rain (perhaps with hail), or snow will follow; with or without lightning. The wind will be from the northward, if the thermometer is low, (for the season)—from the southward, if the thermometer is high. Occasionally a low glass is followed or attended by lightning only, while a storm is beyond the horizon.

A sudden fall of the barometer, with a westerly wind, is sometimes followed by a violent storm from N.W., or N., or N.E.

If a gale sets in from E., or S.E., and the wind veers by the S., the barometer will continue falling until the wind is near a marked change, when a lull may occur; after which the gale will soon be renewed, perhaps suddenly and violently, and the veering of the wind towards the N.W., N., or N.E., will be indicated by a rising of the barometer with a fall of the thermometer.

Three causes (at least)\* appear to affect a barometer:—

1. The direction of the wind—the north-east wind tending to raise it most—the south-west to lower it the most, and wind from points of the compass between them proportionally as they are nearer one or the other extreme points.

N.E. and S.W. may therefore be called the wind's extreme bearings (rather than poles).

The range of difference of height shown, due to change of direction only, from one of these bearings to the other (supposing strength or force, and moisture to remain the same), amounts in these latitudes to about half an inch (as read off).

2. The amount—taken by itself—of vapour, moisture, wet rain, or snow in the wind, or current of air (direction and strength of wind remaining the same), seems to cause a change amounting in an extreme case to about half an inch.

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\* Electrical effects are yet uncertain.