

PRACTICAL HINTS
FOR
AMATEUR WEATHER
FORECASTERS

PRICE

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By P. R. JAMESON, F. R. Met. Soc.

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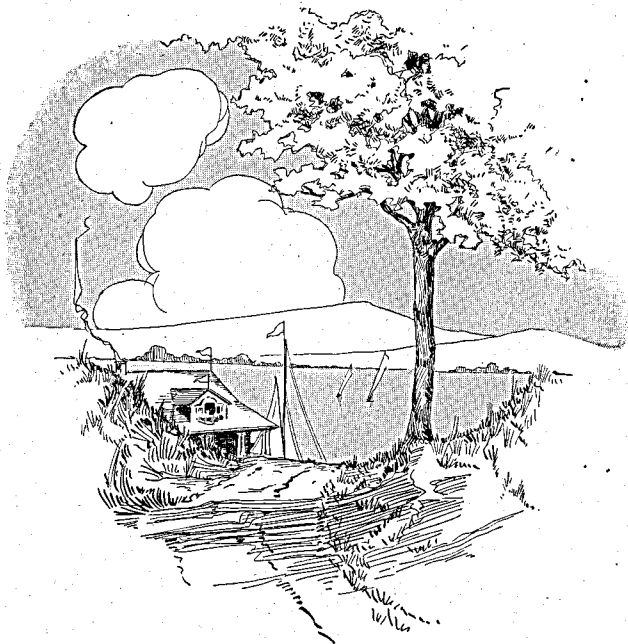
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WEATHER FORECASTERS

By P. R. JAMESON, F. R. Met. Soc., F. R. G. S.

Fellow Amer. Met. Society

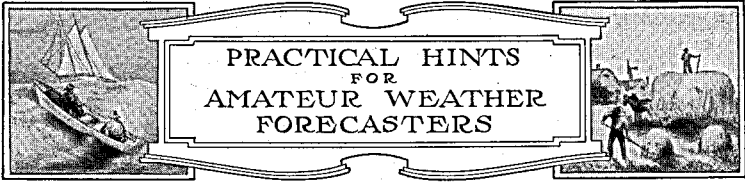


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"Everywhere, skin deep below our boasted science, we are brought up short by mystery impalpable, and by adamantine gates of transcendental forces and incomprehensible laws, of which the Lord, who is both God and Man, alone holds the key, and alone can break the seal."

—Chas. Kingsley

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THIS brochure is written with the idea of simplifying the readings of the barometer to the mind of the layman and is arranged to help him in the forecasting of weather.

Weather, since it governs our health, habits, and pleasure, is a topic of such universal interest that it is no wonder the public is following the subject more closely.

Whilst it is impossible to accurately lay down laws in regard to coming weather, and the effect of winds upon it, a good general idea can be gained by the intelligent perusal of these pages.

“Weather” is different in different localities. Observers should cultivate the habit of carefully noting weather changes in their locality, especially the sequences in which these changes occur, for it is only by this method that these forecasts can be used to the best advantage.

No hard and fast rule can be laid down, for the details vary considerably. Each one must use his own judgment, based on his knowledge of his own particular locality.

See that all instruments used in connection with observations are of good or standard grade. Nothing is so disheartening to one following this interesting subject as instruments which at times give reason for doubting their accuracy.

Develop patience and persistency in following your work. John Ruskin, when a boy at Oxford University, in writing an essay on Meteorology, said:

“One following this science will find himself part of one Mighty Mind—a ray of light entering into one vast eye—a member of a multitudinous Power, contributing to the knowledge and aiding the efforts which will be capable of solving the most deeply hidden problems of nature, penetrating into the most occult causes, and reducing to principle and order the vast multitude of beautiful and wonderful phenomena, by which the wisdom and benevolence of the Supreme Deity regulates the course of the times and the seasons, robes the globe with verdure and fruitfulness, and adapts it to minister to the wants and contribute to the felicity of the innumerable tribes of animated existence.”

HINTS TO OBSERVERS

An important fact, too often overlooked, is that the aneroid foretells, rather than indicates, weather that is present. The aneroid barometer generally indicates changes in weather 12 to 24 hours in advance.

It is essential that a comparison of the barometer readings for several days be taken into consideration before a good forecast can be made. It is for this reason that the recording barometer (Stormograph) is preferable to those of ordinary registering type.

Do not hang the barometer outside. It will work better inside, but in order to get the best results it should be kept in as equal a temperature as possible, provided it is not “Compensated for temperature.” When compensated, temperature changes will have no effect on it.

Under no conditions put faith in the weather words, when they appear on the dial. They are approximate only, and if the hand points to “Rain” it does not follow that that condition must exist.

The figures "31," "30," "29," "28," etc., represent inches of pressure. Between the inches, dials are divided into lesser quantities, sometimes 1/10th of an inch (0.10), sometimes 1/20th of an inch (0.05), sometimes to 1/50th of an inch (0.02), and sometimes to 1/100th of an inch (0.01). It is usual to represent the tenths by longer dividing lines and to figure them. Study your dial carefully before attempting to register readings from it.

See that your barometer is corrected to a "sea level" reading before comparing it with any forecast.

If after purchase you find it is not "corrected" refer to page 20 and carefully follow the instructions.

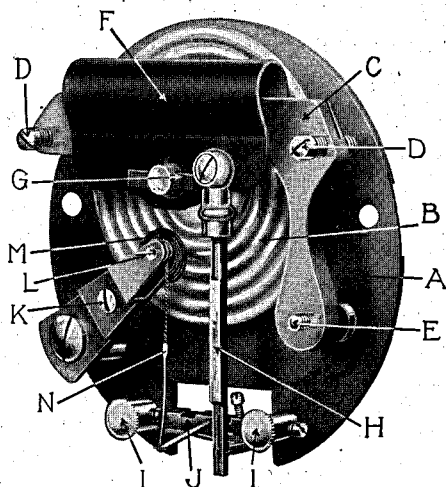
Take care that you take a record of the reading of the barometer before you remove the blue hand.

Example: Barometer uncorrected reads 28.20 inches, altitude 1,750 feet. Remove the hand. Correction for 1,750 feet is 1.93 inches; add this to 28.20 and the result, 30.13 inches, is the point at which the hand should be refitted.

Press the hand carefully but firmly upon the central pin, to make sure it will not become loose under the strain of the continual tapping many people subject their barometers to.

The trouble of adjusting a barometer for any particular altitude can be eliminated by using the instrument described under "A Self Adjusting Barometer."

THE ANEROID BAROMETER (Construction)



- A. Metals, or base plate, upon which parts are set.
- B. Corrugated Chamber of nickel-silver (metal thickness 0.004 inches), from which all air is exhausted. It is secured to the plate "A" by a screw which passes through the plate and to which a nut is fastened.
- C. Bridge which spans vacuum chamber "B."
- D.D. Adjusting screws which are used to either raise or lower the bridge, thereby altering the tension on chamber "B."
- E. Adjusting screw which raises bridge "C" either up or down. The head of this screw is seen in the back of all aneroids.
- F. Steel spring, which slides in back of bridge "C."
- G. Knife-edge (triangular or square steel rod). This passes through the stud of the vacuum chamber and tends to open it, by pulling strongly upwards.

At this point it is interesting to note that the mechanism is already sensitive to changes in atmospheric pressure. As the vacuum chamber is similar to a small circular metal box (closely resembling two lids of a tin can soldered together at their edges), it will, when exhausted of air, collapse. If we pull it from the bottom and also from the top we pull it open, but directly we let go it collapses again.



As the under side is secured to the base plate "A" and the upper side is secured to the strong spring "F," the action is the same as the illustration just given, of the two tin can lids, viz., the strong spring "opens" the vacuum chamber and holds it open. If now we increase the pressure or weight on the vacuum chamber it pulls the spring down with it; if we decrease the pressure the spring opens it up more than ever.

It is now easy to see that this spring moves up or down as the air pressure decreases or increases. If we secure an arm to it, we will magnify its movement at the end of the arm.

- H. Bar, or arm, compensated for temperature, which at its end magnifies movement of the spring "F."
- I.I. Two supports or pillars fitted to plate "A."
- J. Bar or regulator, set between and working on steel points or pivots passing through supports "I.I."

If the illustration be carefully studied it will be noticed that there is a small rod passing from the end of the bar or arm "H" to the edge of the bar or regulator "J." If

now the arm "H" moves in a downward direction it will tend to move the bar or regulator "J" in an outward direction, and if the arm is elevated, the bar or regulator will turn inward toward the vacuum chamber. An arm is set in an upward direction from the regulator "J," which at its upper end greatly magnifies the movement.

K. Arm or cock.

L. Pin or arbor passing through end of cock "K."

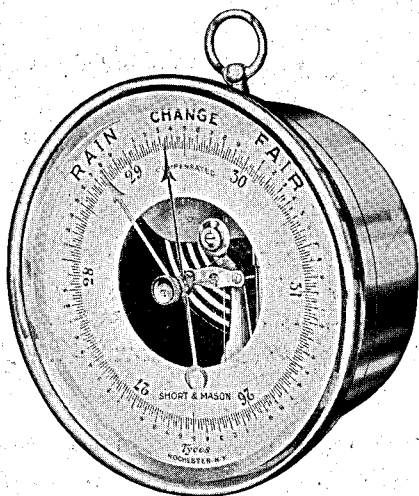
M. Hairspring, fitted to pin "L."

N. Chain of steel, one end of which is fitted to arm passing upward from regulator "J," the other being secured to pin "L," to which the indicating hand is fitted.

HOW TO READ BAROMETERS

The illustration shows a registering barometer of a type mostly in use.

The indicating hand is the darkened hand, responding readily to any change in atmospheric pressure, which ordinarily brings with it a change in existing weather conditions.



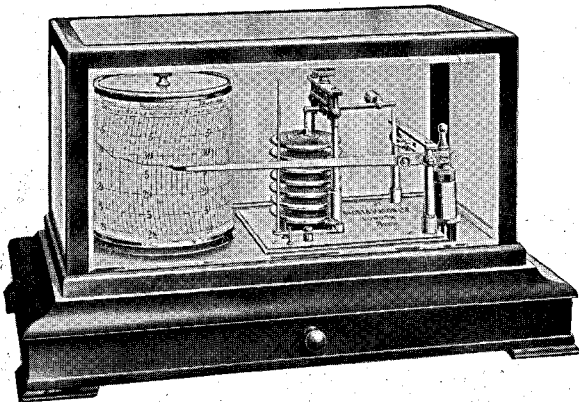
The lighter hand is the "set" hand, and is actuated by means of a brass knob, which passes through the glass.

It is intended that this "set" hand should be placed over the dark hand, which is done by rotating the knob in the glass.

On second observation it is possible to trace any change in the position of the barometer. This will be shown by the blue, or indicating, hand being either to the right or the left of the "set" hand, dependent on the change in atmospheric pressure.

The illustration shows barometer reading at 29.33 inches, while the set hand is reading at 28.78 inches.

The Stormograph, or self-recording barometer, gives a continuous record of weather conditions, tracing them by means of a pen on a chart which is wound around a rotating clock drum. These charts are divided into the days of the week and sub-divided into two-hour spaces, so that the behaviour of the barometer for any preceding time is noted,



all changes being faithfully recorded. With the ordinary, or registering, barometer quick changes are apt to occur, which are not noted by the observer. These quick changes mean passing storms, and are all registered ahead on the Stormograph.

By consulting the record it is quite easy to see whether the change has been gradual or rapid and the instrument is to be greatly preferred in all respects to those of the ordinary registering variety.



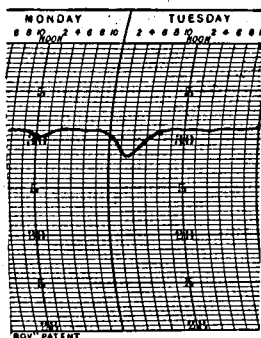
Convex

With a rising record the trace of the pen is convex for a decreasing rate and concave for an increasing one. The reverse is true of a falling barometer. If the fall or rise is steady the line will be straight diagonally.



Concave

This cut illustrates one advantage of the Stormograph.



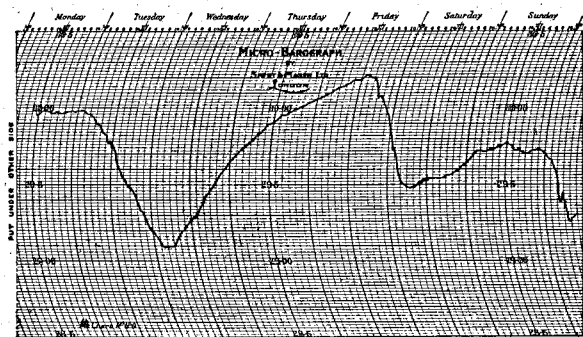
Two observations of an aneroid were made (at 10 p. m. and 8 a. m., respectively), both showing a reading of 30.10 in., which would indicate a "stationary" barometer with a continuance of present weather. A glance at the barograph record shows a rapid fall and rise between 10 p. m. and 8 a. m., which indicates a short but severe storm.

Speaking of a certain "delicate" barogram, Hon. Ralph Abercromby, F. R. Met. Soc., London, says:

"A case of this sort shows, more than any other, the superior value of a continuous trace over an intermittent barograph, for though the latter permits the tabulation of hourly values, they entirely lose all chance of following these minute alterations of pressure which are often accompanied by great changes of weather."

Stormographs are invaluable for mariners, as they are not affected by the roll and motion of a vessel at sea. Here it is important to know not only the amount of rise or fall, but also whether rapid or slow, as winds and seas depend upon these conditions. In all well appointed vessels it is now recognized as a necessity.

The following illustration shows a greatly magnified reading of barometer changes. The instrument from which the record was taken is known as a Micro-Barograph and is constructed on the same general lines as the Stormograph, but is much more sensitive to weather changes, and its record as a consequence is greatly magnified.



Minute fluctuations are discernible by this instrument which in the ordinary way are lost on account of the smallness of the change.

SEA LEVEL AND WHAT IT IS

The air at sea level (weighted down by the air above it) exerts a pressure of about 14.7 pounds per square inch of surface. The pressure on a grown person (average 16 square feet) would be about 35,000 pounds. Were it not for the ease with which the air (under this pressure) penetrates the body, very slight changes in pressure would prove disastrous.

Like terrestrial solids and fluids, the atmosphere is held in place by the attraction of the earth. As the area of the earth's surface is one hundred and ninety-seven million square miles, or seven hundred and ninety quadrillion inches, the total weight of the atmosphere is eleven and two-thirds quintillion pounds.

Of the enormity of these values, some idea may be obtained by instituting a few interesting comparisons. One million trains each composed of one million powerful locomotives would represent but the hundredth part of the weight of the atmosphere. A leaden ball equal in weight to the atmosphere would have a diameter of 60 miles.

This law (decrease of pressure) being known, its principle is used in measuring the height of hills and mountains by means of barometric observations at the two points.

"Sea level," as applied to weather matters, means the reading of the barometer at an altitude corrected in such a manner that it would give a reading equal to the reading of the barometer if the place of observation were at sea level, instead of at an elevation. The higher we go the less the pressure of air. Refer to the illustration on page 16 and imagine that the pressure all over the section illustrated is relatively equal, so that at the level of the sea, "A" has a

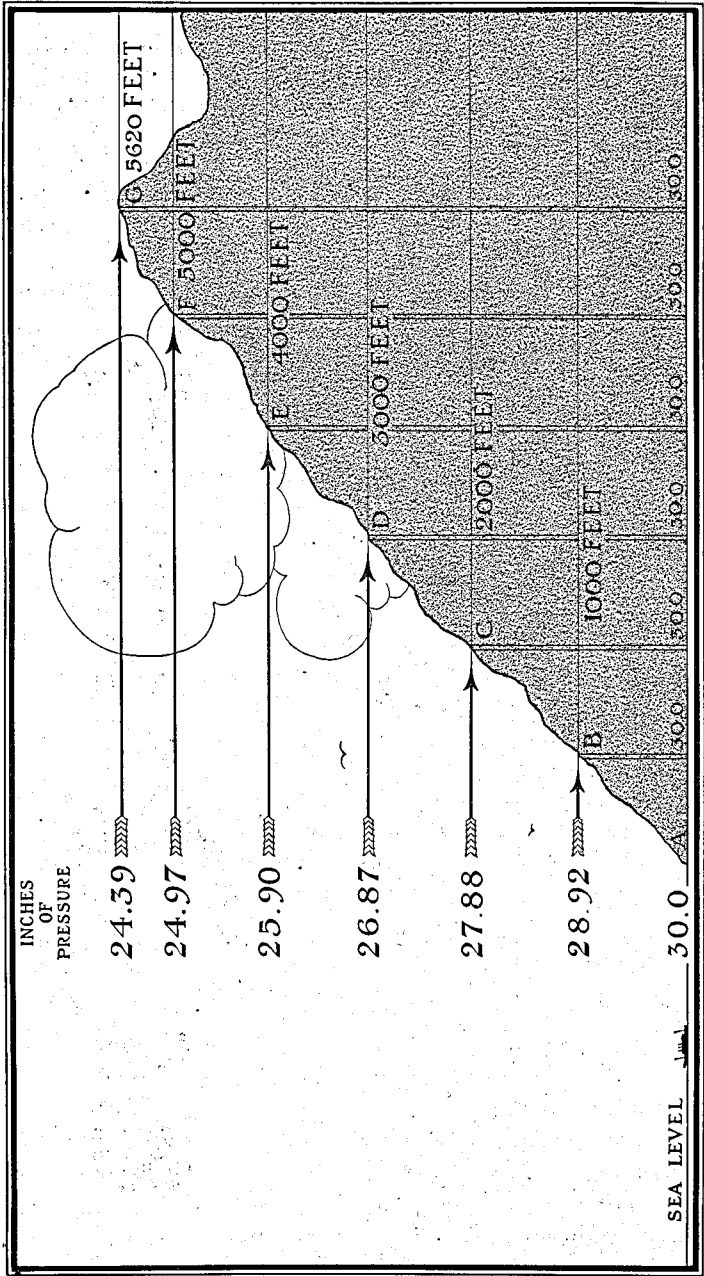
pressure of 30 inches. At the Station "B" (Cobourg, Ill.), it reads 28.92 inches. At "C" (Lowell, Neb.) it reads 27.88 inches. At "D" (Spica, Kansas) it reads 26.87 inches. At "E" (Kanorado, Kansas) it reads 25.90 inches. At "F" (Canfield, Colo.) it reads 24.97 inches. The altitude of these stations is noted by the descriptive letter in the illustration. If at these points the townspeople were to dig deep holes until they reached a point equal to "sea level" and took their barometers down, they would all read 30.0 inches.

The pressure at sea level is not stationary. It has read as high as 31.7 inches, and as low as 26.96 inches, but both these readings are extreme. The barometer at sea level on the average moves only between 28.40 for a low point to 30.30 for a high point. If the pressure at sea level varies a tenth of an inch, all places above it under similar conditions vary in a like ratio.

Some standard of level had consequently to be selected, so that barometers could be "set," or "corrected," for some predetermined point.

This is easy to understand when one considers the Bureaux of the Weather Service, scattered as they are all over the United States and at different elevations.

Let us take, for example, the illustrations. The Bureau barometer at Station "A" would read 30.0, and at Station "B" 28.92, at Station "C" 27.88, and so on. Readings are taken at a certain time in the day at every Bureau in the country and telegraphed to the main office in Washington, D. C. If "A" telegraphed "30," "B" "28.92," "C" "27.88," "D" "26.87," and so on, the Chief Forecaster at Washington would receive no value from the information, unless he determined the elevation of each individual station and made the necessary correction to bring it to a "sea level reading." Consequently each reading is "reduced to sea level" before being issued, and instead of telegraphing in "30," "28.92," "27.88," etc., they would send in "30," "30," "30," etc.,



being the point at which the barometer would stand were it to be taken straight down in a vertical line to the level of the sea.

We have all seen the "weather map," and seen the lines called "isobars" that represent the barometer readings marked 30.2, 30.1, 30.0, 29.9, etc., existing over different sections of the country.

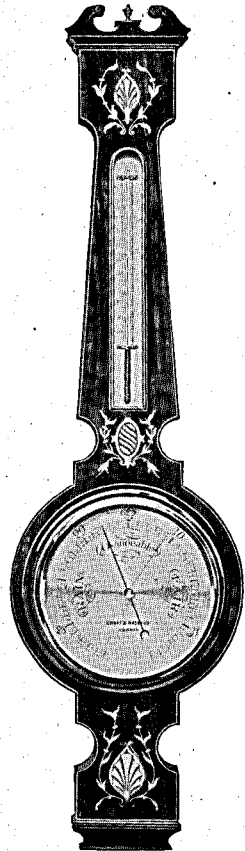
Every town touched by one of those lines has a pressure equal to that noted at the end of the line, when REDUCED TO SEA LEVEL. By this means pressures of equal value can be traced, and it is easy to see which section has a "low" barometer and which section has a "high" barometer.

Terms Used in Forecasting.

"Fair Weather"—that is, the absence of rain or snow, is indicated by several terms. The first of these is the words themselves. It may be used singly or preceded by the word "generally." "Generally fair," as used by the forecast, is less positive than "fair" alone. It signifies that the probability of fair weather over the whole district and for the entire period is not so great as when "fair" alone is used.

Partly Cloudy—Rain—Snow.

"Partly cloudy" is used when the indications favor clouds but no precipitation. "Threatening" is used when the weather will be overcast and gloomy, with the appearance of rain or snow at any moment, yet a measurable amount of precipitation is not anticipated.



A forecast of "rain" or "snow" may be expressed in various ways. In the late fall, early spring and the winter season it is most commonly indicated by the single word "rain" or "snow," when it is expected that the rain will continue for several hours. In other seasons of the year any one of the following terms, viz.: "local rain," "showers," and "thunderstorms," may be used.

Forecasts of local rains, showers or thunderstorms indicate that the conditions are favorable for the occurrence of precipitation in that district.

Clearing.

"Clearing" is a word frequently used which carries a broader meaning than the word itself signifies, viz.: the occurrence of precipitation in the early part of the period; thus, "Clearing tonight" would indicate that rain or snow, whichever might be falling at the beginning of the period, would cease shortly thereafter and that the weather would be clear during the greater part of the time.

A SEMI-AUTOMATIC WEATHER INDICATOR THE STORMOGUIDE

Most people when providing themselves with a weather barometer, put too much faith in the weather words which appear on the dial. These weather terms are simply relative and are more for decorative than practical purposes. They were placed on the original barometers and the practice has been continued.

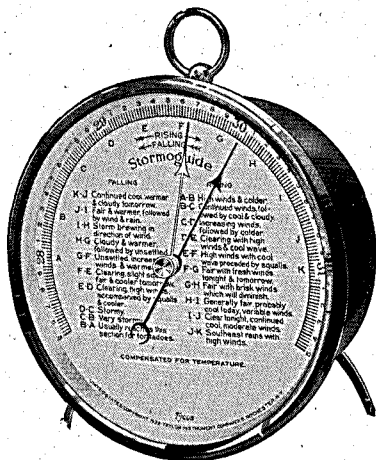
Many devices have been constructed to use with barometers to enable the observer to obtain some idea of coming weather, but by far the most practical is the "Stormoguide," an instrument constructed along the same general lines as the barometer, but with its dial arranged and worded so that most practical weather forecasts can be immediately obtained.

In use it is simplicity itself and all the troubles usually caused by altitude changes are taken care of in the "self

adjusting for altitude" feature, so it naturally becomes the most sensible and practical weather prognosticator for amateurs.

The forecasts are arranged for both "Falling" and "Rising" readings. The indicating hand travels around the dial as on all other barometers, but the barometer or "inch" scale is in sections arranged alphabetically.

As an example, the section 29.30 inches to 29.60 inches is between the letters E and F. Movement of the hand to the right indicates a rise between E and F, and the forecast is "High Winds with cool w a v e preceded by Squalls." If the movement of the hand be to the left, the falling forecast applies between F and E, which is "Clearing, slight squall. Fair and cooler tomorrow." Naturally, if the temperature outside be below the freezing point, "Rain" would have to be understood as "Snow."



A SELF-ADJUSTING BAROMETER FOR GENERAL USE

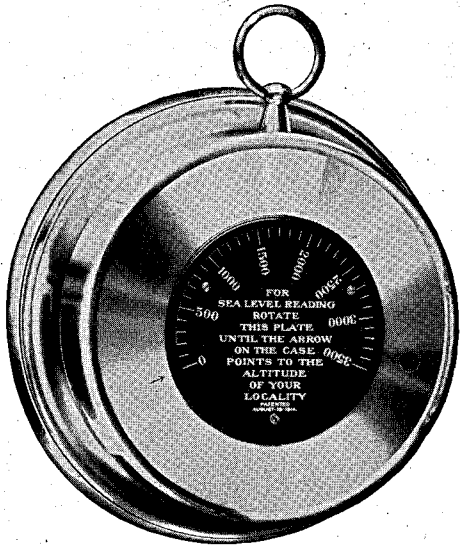
A good barometer for use above sea level is the one illustrated on pages 19 and 20.

This instrument "automatically" sets itself to the correct reading if the plate in the back of the case is turned with the fingers until the arrow—which is engraved on the metal case at the outside circumference of the plate—points to the altitude of the place at which the barometer is being observed.

The setting is extremely simple and can be accomplished in a few seconds. Once adjusted, no other change is necessary until the barometer is changed as regards its location.

This instrument accommodates itself to all points from sea level to 3500 feet.

Being practically a universal pattern as regards its adaptability to altitude, it becomes a most interesting and useful barometer, for it can be taken on vacations, used while traveling and at home, and at all times can be correctly adjusted for its location.



It is made with either a good grade or a high grade compensated movement and the improved mechanism offers an ideal arrangement for all purposes.

HOW TO "SET" BAROMETERS

Applicable only to those barometers which are not provided with an altitude setting dial on the back.

If the observer is situated at any point above sea level, the barometer, unless corrected, will read lower than the reading at sea level, on account of the lessened pressure due to altitude.

After finding the altitude and determining the difference, the indicating hand of the barometer should be lifted off the pin onto which it is fitted and replaced at the corrected reading.

NEVER make this change by means of the small screw seen in the back.

CORRECTIONS FOR ELEVATIONS ABOVE SEA LEVEL

If altitude is	250 feet	add	0.29 inches	to barometer	reading
" "	500	" "	0.57	" "	" "
" "	750	" "	0.85	" "	" "
" "	1000	" "	1.12	" "	" "
" "	1250	" "	1.39	" "	" "
" "	1500	" "	1.66	" "	" "
" "	1750	" "	1.93	" "	" "
" "	2000	" "	2.20	" "	" "
" "	2500	" "	2.72	" "	" "
" "	3000	" "	3.24	" "	" "
" "	3500	" "	3.74	" "	" "
" "	4000	" "	4.24	" "	" "
" "	4500	" "	4.72	" "	" "
" "	5000	" "	5.20	" "	" "
" "	5500	" "	5.67	" "	" "
" "	6000	" "	6.13	" "	" "
" "	6500	" "	6.58	" "	" "
" "	7000	" "	7.03	" "	" "

For instance, suppose the observer be at an altitude of 500 feet and the barometer reads 29.20 inches. If the station were at sea level instead of being 500 feet above (or straight down 500 feet in a vertical line), the barometer would read 0.57 inches higher, so the corrected reading would be 29.20, plus 0.57 = 29.77 inches.

MERCURIAL BAROMETERS

Mercurial barometers are read in exactly the same manner as are those of aneroid type. The scales are divided into inches of pressure and subdivided into tenths or twentieths of an inch, and a vernier is usually attached, so that even closer readings can be arrived at.

The theory of the instrument is exactly the same as that used by Torricelli, its inventor, in 1643. If a glass tube,

closed at one end, 34 to 36 inches long, be filled with mercury and inverted into a cup of mercury, the mercury in the tube will be seen to fall in the tube to a height (at sea level) of approximately 30 inches, irrespective of the length of the glass tube. The height is measured in inches from the level of the mercury in the cup to the level of the mercury in the tube.

The weight of the air on the mercury in the cup holds the mercury at a certain height in the tube. When the pressure is released a trifle the mercury in the tube will naturally fall, and will rise when the pressure is increased.

As mercury expands or contracts when the temperature increases or decreases, corrections to the mercury column are necessary before a true reading of atmospheric pressure can be arrived at. Standard temperature is 32° Faht. or 0° Centigrade.

Another correction is adjustment of the cistern. Naturally, in a modern mercury barometer a "cup" is not used, as described in a previous paragraph, but instead the mercury is placed in a cylinder of glass, the barometer tube passing through a neck into it.

A small ivory point is fitted inside the top of this glass cylinder and before a reading can be taken the mercury has to be raised or lowered in the cylinder (by means of an adjustment underneath), so that its exact level just touches the ivory point. If this is not done carefully and accurately the readings will be erroneous.

There is a small correction for gravity, which also must be taken into consideration, and also one for meniscus. Mercury will not wet glass, but as capillary attraction depresses the column and gives it a rounded top, it is necessary to deter-



mine what the reading would be if the mercury column were cut straight across instead of being rounded. This is called "meniscus correction."

The metal scales, upon which are engraved the inches of pressure, are affected by temperature, being longer when warm and shorter when cool. A correction has also to be applied here.

When all these corrections have been found and applied to the reading of the barometer, a true reading of the atmosphere has been taken.

In high-grade COMPENSATED aneroid barometers, all corrections are taken care of in construction, and the observed reading on the dial is the true reading.

EFFECT OF TEMPERATURE ON THE WEATHER

Barometer Rising

Below 30° Faht. Cold Wave.
Between 30° and 40° Faht. Freezing.
Between 40° and 50° Faht. Probable Frost.
Between 50° and 60° Faht. Cooler.
Above 60° Faht. Warm with cool nights.

Barometer Falling

Below 30° Faht. Snow Storm.
Between 30° and 40° Faht. Rain or Snow.
Between 40° and 50° Faht. Rain Storm.
Between 50° and 60° Faht. Heavy Rains.
Above 60° Faht. Showers.

The above are OUTSIDE temperatures, and should be taken in the shade with a thermometer of known accuracy, exposed in such a manner as to have a perfect circulation of air around its bulb. (See brochure "The Thermometer and its Family Tree").

BEAUFORT'S SCALE OF WINDS

Used Mostly at Sea

	Statute Miles Per Hour
0 Calm.....	0 to 3
1 Light air.....	3 to 8
2 Light breeze.....	8 to 13
3 Gentle breeze.....	13 to 18
4 Moderate breeze.....	18 to 23
5 Fresh breeze.....	23 to 28
6 Strong breeze.....	28 to 34
7 Moderate gale.....	34 to 40
8 Fresh gale.....	40 to 48
9 Strong gale.....	48 to 56
10 Whole gale.....	56 to 65
11 Storm.....	65 to 75
12 Hurricane.....	75 and over

SCALE OF WINDS

As Used by British Meteorological Office

Beaufort	Miles Per Hour	Meters Per Second	Feet Per Second	Pressure
				Pounds Per Square Foot
No.	Less than	Less than	Less than	
0	1	0.3	2	0.00
1	1-3	0.3- 1.5	2-5	0.01
2	4-7	1.6- 3.3	6-11	0.08
3	8-12	3.4- 5.4	12-18	0.28
4	13-18	5.5- 8.0	19-27	0.67
5	19-24	8.1-10.7	28-36	1.31
6	25-31	10.8-13.8	37-46	2.3
7	32-38	13.9-17.1	47-56	3.6
8	39-46	17.2-20.7	57-68	5.4
9	47-54	20.8-24.4	69-80	7.7
10	55-63	24.5-28.4	81-93	10.5
11	64-75	28.5-33.5	94-110	14.0
12	Above 75	33.6 or above	Above 110	17.0 or over

WINDS

“When the glass falls low,
Prepare for a blow;
When it rises high,
Let all your kites fly.”

In the Northern Hemisphere, standing with your face to the wind, the barometer will be lower on your right hand than on the left. The reverse of this is true for the Southern Hemisphere.

Wind will be, or may be expected to be:—

Easterly when the pressure is high in N. or low in S.;

Southerly when pressure is high in E. and low in W.;

Westerly when pressure is high in S. or low in N.;

Northerly when pressure is high in W. or low in E.

A rapid rise or a rapid fall intimates that a strong wind is about to blow, and that the wind will bring with it a change in the weather. What the precise nature of the change is to be must, in the main, depend upon the direction from which the wind blows.

“Veering” wind is a wind that moves from left to right; i.e., “clockwise.”

If the wind shifts the opposite way, the change is called “backing,” indicating the approach of another storm.

“When the wind veers against the sun,
Trust it not, for back 'twill run.”

GENERAL INDICATIONS

Barometer Rising

1. A gradual but steady rise indicates settled fair weather.
2. A very slow rise from a low point is usually associated with high winds and dry weather.
3. A rapid rise indicates clear weather and high winds.

The barometer rises for northerly wind (including from northwest, by NORTH, to Eastward), for dry or less wet weather, for less wind, or more than one of these changes—except on a few occasions when rain, hail, or snow, comes from the northward with STRONG wind.

GENERAL INDICATIONS

Barometer Falling

4. A gradual but steady fall indicates unsettled or wet weather.
5. A very slow fall from a high point is usually connected with wet and unpleasant weather, without much wind.
6. A sudden fall indicates a sudden shower, or high winds, or both.

The barometer falls for southerly wind (including from southeast by the SOUTH to the westward), for wet weather, for stronger wind, or for more than one of these changes—except on few occasions when MODERATE wind with rain (or snow) comes from the northward.

APPROXIMATE BAROMETER READINGS

Barometer Rising

- 29.0 to 29.3 inches. . . Clearing, with high winds and cool wave.
- 29.3 to 29.6 inches. . . High winds, with cool wave, preceded by squalls.
- 29.6 to 29.9 inches. . . Fair weather, with fresh winds tonight and tomorrow.
- 29.9 to 30.2 inches. . . Fair, with brisk winds, which will diminish.
- 30.2 to 30.5 inches. . . Generally fair weather, probably cool today, with variable winds.
- 30.5 to 30.8 inches. . . Clear weather tonight and continued cool, with moderate winds.
- 30.8 to 31.0 inches. . . Southeast rains with high winds.

APPROXIMATE BAROMETER READINGS

Barometer Falling

- 30.7 to 30.5 inches. . . Fair and warmer, followed by wind and rain.
- 30.5 to 30.2 inches. . . Storm brewing in the direction of the wind.
- 30.2 to 29.9 inches. . . Cloudy and warmer, followed by unsettled weather.
- 29.9 to 29.6 inches. . . Unsettled weather, increasing winds and warmer.
- 29.6 to 29.3 inches. . . Clearing, slight squalls, fair and cooler tomorrow.
- 29.3 to 29.0 inches. . . Clearing weather, with high winds, accompanied by squalls and cooler.
- 29.0 to 28.7 inches. . . Stormy.

WINDS

Barometer Rising

- S. to S.W. . . . Clearing within a few hours and continued fair for next few days.
- Barometer 30.0 inches, or below, and rising slowly.
- S.W. to N.W. . . . Fair, with slight temperature changes.
- Barometer 30.10 to 30.20 inches, steady.
- S.W. to N.W. . . . Fair, followed within 48 hours by warmer and rain.
- Barometer 30.10 to 30.20 inches, rising rapidly.
- Going to W. . . . Clearing and colder.
- Barometer 29.80 inches, or below, and rising rapidly.
- Between N. and E. . . . Weather turning cooler.
- Barometer rising.
- Between S.W. and S. . . . Weather probably warmer tomorrow, but cloudy.
- Barometer rising.

WINDS

Barometer Falling.

S. to E.
Barometer 29.8 inches and below and falling rapidly. Severe storm of rain (in summer) or snow (in winter, imminent, clearing and colder in 24 hours.

S. to S.E.
Barometer 30.1 to 30.2 inches, falling rapidly. Rain in 18 to 24 hours.

S. to S.E.
Barometer 30.1 to 30.2 inches, falling slowly. Rain in about 24 hours.

E. to N.E.
Barometer 30.10 and above and falling slowly (winter). Rain or snow within 24 hours.

E. to N.E.
Barometer 30.10 and above and falling slowly (summer). With light winds; rain may not fall for several days.

E. to N.E.
Barometer 30.10 inches and above and falling rapidly (summer). Rain probable within 12 to 24 hours.

E. to N.E.
Barometer 30.10 and above and falling rapidly (winter). Rain or snow, with increasing wind, especially if wind is from N.E.

S.W. to N.W.
Barometer above 30.2 inches and falling slowly. Slowly rising temperature and fair for 48 hours.

S.W. to N.W.
Barometer 30.1 to 30.2 inches and falling rapidly. Warmer, with rain in from 18 to 24 hours.

WINDS

Barometer Falling (Continued)

S.W. to N.W. Barometer 30.1 to 30.2 inches and falling slowly.	Warmer, with rain in from 24 to 36 hours.
S.E. to N.E. 30 and below and falling rapidly.	Rain, with high winds, fol- lowed in 24 hours by clearing and cooler.
S.E. to N.E. 30 and below and falling slowly.	Rain for one or two days.
E. to N. Barometer 29.8 or below, falling rapidly.	Severe N.E. gales and heavy rains or snow, followed in winter by cold wave.
S.E. to S.W. With barometer falling.	Storm coming from W. or N.W., followed by cooler and W. to N.W. winds.
N. and E. With barometer falling.	Storm coming from S. or S.W., followed by cooler and N. to N.W. winds.

EXTREME READINGS OF THE BAROMETER

The following reports are of interest, since they give an idea of extreme readings taken in different parts of the world:

High Barometer Readings

Semipalatinsk, Siberia, December 16th, 1877—31.72 inches.

Fort Assiniboine, Montana, January 6th, 1886—31.21 inches.

Low Barometer Readings

Reikiavik, Greenland, February 4th, 1824—27.25 inches.

Cunard Steamer "Tarifa," Lat. 51° N., Long. 24° W., February 5th, 1870—27.33 inches.

False Bay, Bengal, September 22nd, 1885—27.13 inches.

Record Low Barometer Reading

"During the night of January 9-10th, 1913, remarkably low readings were recorded, the lowest, 26.96 inches, being registered by the aneroid barometer on the British Steamer "Manchester Inventor" at 1 a.m. the 10th, latitude 52° North, longitude 25° 30' West. This is probably the lowest barometer reading ever made on the North Atlantic."

(From Royal Meteorological Society's Journal, July, 1913.)

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PERSONAL WEATHER NOTES
