A foot from the panes, and at the height of the observer's eye, two parallel transverse wooden bars about an inch wide should be fastened. The thermometer should be fastened exactly perpendicularly to the bars, so that its top is secured by a screw to the upper bar, while its bulb projects a few inches below the lower bar, to which the instrument is secured by a clasp or screw.

The bulb should be so placed that it will not rest against a wooden or metal back, but be free from both scale and back.

READING.

In reading it is very important that the observer's eye should be exactly at the same height as the top of the column of mercury, otherwise an erroneous reading will be made.

The reading may be best made through the panes, to avoid the influence of the temperature of the chamber on the thermometer, and a second one should be made shortly after to verify the first. When the bulb becomes moistened by rain or fog, or is covered by ice or snow, it should be carefully wiped, and the reading should not be made until the instrument has acquired the temperature of air.

VERIFICATION.

The zero point should be verified unless the thermometer is known to be correct. To do this immerse the bulb in a vessel filled with snow or pounded ice, and press slightly a layer of several inches around it, so that the stem, which should be exactly perpendicular, is covered with snow as high as the freezing point on the scale. Do this in a room the temperature of which is above the freezing point, as that point indicates the temperature of *melting* snow.

After about half an hour read it, taking care to have the eye exactly perpendicular to the column of the mercury, and stirring the thermometer about freely in the mixture.

In case the summit of the mercury and the freezing-point of the scale do not agree, note the difference. Some instruments are so constructed as to admit of loosening the screws and sliding the tube containing the mercury up or down, a distance equivalent to the error, but it is not advisable to make frequent mechanical changes of this kind. The correction should be applied to each reading.

SELF-REGISTERING THERMOMETERS.

The two thermometers—maximum and minimum—are to be placed beside the common thermometer, with their bulbs opposite and free, attached horizontally to two perpendicular wooden bars uniting the parallel bars running accross the shelter.

In reading them the same care must be used with the common thermometer, the eye being in a perpendicular line with the extremity of the index. After verifying the first reading by a second, bring the index of each to the summit of its column by the use of a magnet, in order to set them for the next day's record.

VERIFICATION.

Compare the two thermometers frequently with the common thermometer, and verify the the zero several times each year in the same manner as stated for the common thermometer, and enter the error in the register to be at each reading.

HYGROMETER.

These thermometers—one with a dry and one with a wet bulb—must be placed on the parallel bars as the common thermometer, and several inches apart. The bulbs should be free and at a distance from the bars.

The cloth covering the bulb should be muslin and of fine texture, and must be changed every month, and the bulb cleaned. It can be washed without removing by means of a syringe. It may be kept continually wet, or be moistened a short time before taking the observation; and experience has shown that the average result is the same in both cases. Filtered rain water must be used.

VERIFICATION.

The two thermometers must be frequently compared, and if they are not adjusted so as to correct any difference which may exist, the error must be registered and taken into account after making an observation.

THE ANEMOMETER.

The anemometer should be carefully fixed in a vertical position, upon a post of sufficient height to bring the dial on a level with the eye of the observer, and in an exposed condition, so as to receive the full force of the wind. The post should be planted firmly enough to prevent the instrument from vibrating.

To obtain the velocity of the wind at any time, two observations, at an interval of exactly five minutes, should be made, and the difference between the readings, which will be obtained in miles and tenths of miles, multiplied by 12, gives the velocity per hour. Example: suppose the outer index to be at 3 the first reading, and at 3.6 the second, the difference is 0.6, which, multiplied by 12, gives 7 2 miles as the velocity per hour. Great care should be exercised to make these observations exactly five minutes apart.

Reading: each line on the inner dial indicates 10 miles, and the dial reads by tens from ten to one thousand. Each line on the outer dial indicates a tenth of a mile, and the dial reads by tenths and by miles, from one-tenth of a mile to ten miles. The zero-line of the outer dial is the point at which the inner dial must be read. Read on the inner dial the line exactly coinciding with the *zero-line of the outer dial*, or if no line exactly coincides, then read the line next less than it.

No line of the inner dial can exactly coincide ith the zero of the outer dial unless that zero exactly coincides with the steel index at the top of the dials, except when the instrument is properly adjusted.

When such coincidence does not take place, the outer dial must be read at the point exactly coinciding with the steel index, and the distance there indicated, which is noted on the outer dial in miles and tenths of miles, must be added to the result obtained from the inner dial.

RAIN-GUAGE.

The rain guage should be placed with the top of the collector twelve inches above the surface of the ground, and be firmly fixed in a vertical position. It should be examined each morning at the usual time of observation, and its contents carefully measured by a graduated rod, which is furnished with the guage. Snow should be melted and measured as rain. The guage should be emptied for each observation. When possible it is important to keep several rain-guages in different but adjacent localities, as the results are liable to be much affected by local peculiarities.

The following prediction is being so closely verified, we reproduce it from our first issue:—

A LONG RANGE PREDICTION.

Almost invariably my long range predictions have proved correct, whilst many of my short and more detailed ones have been *out* on many dates. It seems as if this fact was intended to show us that we must not take too much upon ourselves as regards weather prophecy. It is all legitimate enough to endeavor, by a close study of general compensation and other helps, to arrive at an idea of the character of an approaching Autumn, Winter, Spring or Summer; but to go further than this and to specify dates for the snowfalls and cold dips of a particular period smacks a little of presumption. By watching the waves of weather, however, such general forecasts as have just been referred to may, and undoubtedly have been, formed to a wonderfully accurate degree, and have proved of great service to the general community.

It is my purpose in the present communication to take a jump off into March next and to state what in my humble opinion is likely to be the character of the weather during the latter portion of the Winter of 1882, including the Spring and fore part of the Summer of the same year. A wave of average low temperature is likely to occur towards the latter part of next February and continue through March, April, May and much of June. This will make March a coldand wintry month, with deep snows throughout Canada and the Northern and Western United States. The temperature of April and May will probably be considerably below the average, and both snow falls and frosts will continue up to a late period. After a brief period of warmth in June low temperatures for the season will prevail, with cold rains. The Summer throughout is likely to be cool and wet and very unfavorable everywhere to agricultural pursuits, ending in an old and stormy Fall. There is a possibility of a brief period of heat during the Summer, but this wave is not likely to be of sufficient duration to be of much benefit. H. G. V.

January, 1882.

May Entry at New York.

Business is duller than it ought to be at this season, and one of the reasons is the unfavorable state of the weather. It is almost unparalelled in New York in the first week of May to see the great majority of the people wearing their overcoats, but so it is. The weather has still a shrewd winter quality in it more becoming to March than to May. So far as comfort is concerned the temperature is delightful and inspiriting, but that is not what is wanted for the buds and blossoms which are very backward in this section of the country. The magnificent spectacle presented in the western sky after sunset by the two planets Jupiter and Venus so close together as they are now suggests that they are laying their heads together for mischief. When two beauties get conferring there is generally trouble brewing. Who knows what effect these combinations have on the weather and trade. If the comet would only hurry up and get here this week the spectacle of the heavens as presented now would be magnificant in the extreme. But Jupiter will have taken himself off before then as he is positively announced to appear as a morning star in June. Great preparations are being made by the amateur astronomers in this city for the approach of the comet, and I am told there is quite a boom in telescopes suitable for star gazing. There probably never was a comet in the history of the world looked for so closely by so many people and with less apprehension than this one.

INFLUENCE OF FORESTS ON CLIMATE.

Many rivers have totally disappeared, or have been reduced to mere streams from an irrational and heinous felling of the forests. In the northeast of Germany, the Narp and Gold rivers exist only in name The classic lands of antiquity are rich in sad lessons of deforestation. The springs and brooks of Palestine are