

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured covers/
Couverture de couleur
- Covers damaged/
Couverture endommagée
- Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée
- Cover title missing/
Le titre de couverture manque
- Coloured maps/
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur
- Bound with other material/
Relié avec d'autres documents
- Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.
- Additional comments:/
Commentaires supplémentaires:

- Coloured pages/
Pages de couleur
 - Pages damaged/
Pages endommagées
 - Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
 - Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
 - Pages detached/
Pages détachées
 - Showthrough/
Transparence
 - Quality of print varies/
Qualité inégale de l'impression
 - Continuous pagination/
Pagination continue
 - Includes index(es)/
Comprend un (des) index
- Title on header taken from: /
Le titre de l'en-tête provient:
- Title page of issue/
Page de titre de la livraison
 - Caption of issue/
Titre de départ de la livraison
 - Masthead/
Générique (périodiques) de la livraison

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

VENNOR'S

WEATHER



BULLETIN

A PAPER DEVOTED EXCLUSIVELY TO THE WEATHER AND ALLIED TOPICS.
 "Study the Past if You would Divine the Future."

Vol. I.—No. 1.

MONTREAL, JANUARY, 1882.

\$1.00 PER ANNUM.

30 Cts. A QUARTER.
 SINGLE COPIES, 10 Cts.

Copyright 1882 by HENRY G. VENNOR, before the Minister of Agriculture, Ottawa.

VENNOR'S WEATHER BULLETIN JANUARY, 1882.

This little monthly is issued with a view to the revision of my predictions for the months as these approach, and for the addition of further details. It has been for some time demanded of me by the thousands now interested in the great weather subject. It is not intended to perplex the reader with a mass of figures relative to Barometric and Thermometric readings for the days, weeks or months; direction or force of the wind; snow or rain-falls, etc.—all these may be had from other sources,—but rather to present in a readable and simple form, occasionally with a diagram, what have been the more marked features of the closing month, and endeavor to sketch out the probable outline of the weather for that just entering. Thus, having to deal with but thirty or thirty-one days in advance, a closer fulfilment of these predictions may be looked for, and my system of forecasting tested from a fairer standpoint on both sides. The BULLETIN will also be used as a medium for weather correspondence, and will enable me to reply briefly to the thousands of enquiries which are daily pouring in from every quarter of the North American Continent.

In future my predictions will be confined to this monthly paper, and every endeavor will be made to ensure its regular issue on the last week of each month of the year.—Ed.

MONTREAL AS A WINTER RESORT.

It is a pity that the advantages of Montreal as a winter resort are not systematically presented to the American people. Probably no city in the world has so many attractions for those who like out-of-door exercise and enjoy the exhilarating atmosphere of a winter season. What with snowshoeing, skating, tobogganing, curling, sleigh driving, capital hotels, and a certainty of being hospitably treated by our people, Americans should be made aware of the pleasures to be derived from a short sojourn here. Of course, every winter numbers of our cousins do find their way here and participate in our amusements, usually returning year after year; but if our hotels were to advertise freely, we are convinced a large influx of visitors would be secured.—Star.

This winter is one of the mildest on record in British Columbia.

FEBRUARY.

February is one of the most difficult months to predict the weather for, as it is "fickle." In Canada it used to have a character for cold and dryness, but of late years has changed considerably. I test this month by two different systems, the one bearing upon its leading or main features in most sections of the Northern Hemisphere, and the other upon its more detailed behaviour in certain named sections of the United States and Canada.

THE PROSPECTS IN GENERAL.

After a long and patient perusal of a pile of past weather charts and note-books, I throw them aside with somewhat of the following general vision before me:—

A month of abrupt changes from cold to mildness, and snow to rains—on the whole, a temperature considerably above the *mean*, caused by one or two periods of unusual warmth—chief disturbances to the westward and southward of the St. Lawrence River below Lake Ontario. Copious rains and floods in western and southwestern sections of Canada and the United States. Some heavy storms in Western and North-Western States. A total disappearance of snow in many sections. A re-opening of new ice-locked waters and possibly a renewal of navigation in some quarters. One decided cold "dip." A windy and stormy ending of the month nearly everywhere, with a return to winter in MARCH.

IN DETAIL.

Details are always the most severe test of my weather system. Many persons have advised me to content myself with the general impressions and leave out dates. But this would never answer what is demanded of me. Consequently, although always holding forth my first and leading *general* forecast of an approaching period, as that which is chiefly to be depended upon, I must continue my attempts at greater detail, by endeavoring to fix upon dates on or close to which storms or changes in the weather are most likely to occur. The following is my attempt for February:—

February likely to enter with snow storms at many points, chiefly to west and southward, these turning to rain storms towards and on the 4th and 5th. The 5th will probably usher in a week of mildness, with rains and floods west and south, viz., in Ontario, Western and Middle States. A general break-up of the winter in the majority of sections. The 11th and 12th will probably bring a return of colder and blustery weather, with snow-falls, and rain in some quarters. The week between the 12th and 18th is likely

to give alternations of mildness spent with snow and rain storms, these becoming more severe towards the end of week; the 17th or 18th giving general snow-falls. The 19th will probably usher in a terrible week of rain storms (snow in some quarters), and floods, with days of very high winds and gales.

These will be more marked in western and southern sections of country, and will terminate in generally colder weather and heavy snow-falls towards the 25th and 26th days and entry of March.

Thus, though February may to some extent shatter the winter considerably, "Old Boreas" will reassert his reign with and through the fore part of March; but on this month more in our next issue.

Jan. 28th.

H. G. V.

EDITOR'S DRAWER.

It is intended to increase this paper to a sixteen page sheet, should it receive the requisite support!

Original contributions on "THE WEATHER" solicited, and, if accepted, paid for. It is particularly desirable that all papers pertaining to our winters of fifty years ago and more should be put on record in this "Bulletin," and all such documents forwarded to me will be carefully returned.

A copy of this "Bulletin" sent free to all parties sending in five names with remittance. Give clear Post-office address.

An old chart engraved on steel, at Quebec, in 1827, and entitled: "A General Table of New and Full Moons, shewing the days of New and Full Moons until the year 1900, with the Moon's Age on every day," will be reproduced and published with the next number of the BULLETIN.

Correspondence Column opened next issue.

Thanks to Manager of Montreal Telegraph Company for free transmittance of despatches to all points.

WILL IT BE A "COUPLET" OR A "TRIAD."

In the ALMANAC allusion has already been made to *couplets* and *triads* of years or seasons of similar weather. The whole character of the approaching month of February hangs upon which of these two it is to be. We have now had two cold and stormy Februaries in succession, namely, 1880 and 1881, and the question at issue now is: What of February, 1882? As will be observed from my prediction for the month in another column, I have pictured a mild month, and unless the unforeseen occurrence of a *triad* takes place the forecast will be correct.

COLD WINTERS.

FOR THE PURPOSES OF COMPARISON.

The month of January, 1850, was scarcely ever equalled for the low reading of the thermometer (which indicated 0.21 degrees lower than the mean temperature of January for the seven preceding years, and was the coldest January on record here). The mean temperature of the month was 4.05 degrees.

February of the same year was the warmest February on record, the mean temperature being 21.61 degrees, and 8.30 degrees higher than the mean for February for the seven preceding years. The lowest temperature was observed on the 18th January, and was 31.8 degrees below zero. There were three or more cold terms or spells in January of this year. These were felt generally in Canada and through the Eastern and the Northern States. On the 18th January, at Missisquoi, the thermometer attained a minimum of 42 degrees below zero. The fact was furnished by Mr. J. C. Baker. At Sherbrooke, the greatest cold observed was on the morning of the 24th January, when the mercury in the thermometer was frozen in those instruments using it and Professor Miles, of Lennoxville College, observed his spirit thermometer at 44 degrees below zero; while at Missisquoi, on the 24th, Mr. Baker's record showed a temperature of 24 degrees below zero, and at this place on the 24th day, the mercury stood at 29.6 degrees below zero, and the spirit thermometer stood also at the same temperature. At Watertown, N. Y., on the 18th, the temperature was 36 degrees below zero; and on the 24th, at the same place, frozen mercury was carried about in a vial for exhibition. At Harvard College, at 7 a.m., on the 24th, the thermometer indicated a temperature of 16° below zero,—at Albany it reached 30°—, at Providence it reached 32°—, at Quebec, 39° 5'; while farther south the weather was somewhat moderate, but was accompanied by very heavy snow storms.

In Montreal, a record kept by the late Dr. Hall indicated on the 15th a temperature of only 20° below zero on the 23rd, —27°, and on the 24th, —25° 7'.

TABLE OF THERMOMETER READINGS FOR JANUARY, 1850—(ST. MARTIN'S OBSERVATORY, MONTREAL.)

January	8th	6 a.m.	— 4° 1	(Below zero).
"	"	noon	— 2° 9	"
"	"	10 p.m.	— 13° 6	"
"	"	midnight	— 16° 4	"
"	9th	6 a.m.	— 29° 9	"
"	"	noon	— 23° 8	"
"	"	10 p.m.	— 34° 2	"
"	"	midnight	— 36° 0	"
"	10th	6 a.m.	— 43° 6	"
"	"	noon	— 20° 1	"
"	"	10 p.m.	— 29° 2	"
"	"	midnight	— 31° 6	"
"	11th	6 a.m.	— 37° 1	"
"	"	noon	— 34° 8	"
"	"	10 p.m.	— 21° 6	"
"	"	midnight	— 18° 1	"
"	12th	6 a.m.	— 19° 4	"
"	"	10 p.m.	— 5° 0	"
"	"	midnight	— 3° 1	"
"	13th	6 a.m.	— 0° 0	"
"	"	7 a.m.	— 0° 0	(Zero).

Thus, for a period of 124 hours, the temperature was below zero mercury free in open vessels, but the column of mercury in the tube of the thermometer did not cease to contract at the lowest temperature—43° 6 (below zero).

At 10 p.m. on the 9th the barometer attained the usual height of 30.614 inches.

EXTRAORDINARY SEASONS.

During the December of 1877, a western newspaper remarked that not since 1837 has any December season been known so mild. Lawn grasses were growing finely, and dandelions were in bloom navigation was perfectly open. And now, again, in 1881, we have had to record a very similar state of affairs or the same month of the year.

THE OPEN WINTER OF 1877-78 IN THE NORTH-WEST.

This remarkable weather knocks the Old Settler's Association on their beam ends. They never saw anything like it, not even in 1840, and nothing so grieves an old settler as to be compelled to admit that he can't find a parallel in ancient times for modern meteorological phenomena. Here is the 22nd day of December, with the mercury dancing on its silver heels to the music of 50° above zero; the Mississippi River bursting its crystal bonds and giving us open water from St. Paul to the lake; the steamer "Aunt Betsie," with its barges, grounded on a bar three weeks ago, firing up and bringing herself and convoy in safety to the St. Paul levee; ten boats of the St. Paul boat club, each occupied with scullers or crews of oarsmen, sporting upon the placid bosom of the ancestor of meandering streams—all this and more too is the result of the remarkable weather which now prevails in Minnesota. The movement and disappearance of the ice night before last reopens navigation from St. Paul to Lake Pepin, and this fact is worthy of being placed on record for the benefit of all coming investigation of climatic facts and theories in Minnesota.—*Pioneer Press*, St. Paul, Minn.

THE WEATHER AS IT WAS AND IS.

In the happy years of long ago, before people were made miserable by the gloomy predictions of barometers and the incorruptible integrity of thermometers, the months were known by their distinct and strongly-marked characteristics. January was famous for its quantity of cold to the square inch, and its mid-month breaking up, February was hailed by lovers of sleigh-riding, as generous with its gifts of snow; March was given the cold-shoulder because of its sleet-laden winds; April was detested for its showers and its slush; May was greeted gaily for its flower-perfumed breezes; June was a delicious month, filled with beautiful sights of fresh foliage and verdant fields, and was rendered more lovable by coquetish spells of tearfulness. In fact, each lunar period was so well known that time-keeping methods were unnecessary for its identification. But, alas! how things have changed! The year is but a hodge-podge. A man is in his duster to-day, and in his ulster to-morrow, and is happy in neither. Every citizen, in the attempted adjustment of his attire to the needs of the weather, becomes a lightning change artist. Some astronomer seeking fame has asserted that old mother earth is sheering from her pathway, like a colt newly-broken to harness and driven along a highway aligned by stump fences, and that the fickleness of the weather is the result. But that theory is not of sufficient opacity. It is too thin. Old mother earth is no such chicken. She has swung around the circle too many times to get dissatisfied and cut across lots. The real trouble may be attributed to the barometers and the thermometers. The weather clerk is like a horse car conductor. Ever since the introduction of the bell-punch and the hob-tail car, the horse car conductor has grown more careless in his attire and less inclined to look where he spits. You watch a man, and keep his books for him, and he gets demoralized and tries to make you miserable. It is the old story: the more you do for a person the more the person expects you to do. The weather clerk is taking his revenge for the slights put upon him, and asks you if you are any happier, since you know just what the weather is and what it is going to be. You reply "no."—*Argus*.

"Behold, I will put a fleece of wool in the floor; and if the dew be on the fleece only, and it be dry upon all the earth beside," (Judges vi. 37.) Gideon considered this a miracle, though he required a second one to satisfy him of his divine mission. In Southern California, in summer, it would scarcely be a miracle. Any such object as a fleece laid over night on the arid plain would be full of water, while around it the dust would be nearly as dry as at noontime.

YEARS OF HEAVY SNOW-FALL.

December, 1830, 1831, and 1834, on the Island of Montreal, showed a fall of 26.50, 27.45 and 27.70 inches respectively. In February, 1831, there was a fall of 23.30 inches; in 1832, 25.85 inches; and in 1835, 21.80 inches, but these are exceptions, for February has not generally been characterized by heavy snow-falls.

The heaviest fall of snow on record, in the neighborhood of Montreal, occurred on the 17th and 18th of January, 1827, when from 60 to 70 inches of snow fell, and drifts in the country roads were from 12 to 15 feet high.

1861 was a year of great snow-fall in Canada. At Montreal the total depth which fell was about 99.58 inches. In 1868, 103.27 inches fell, chiefly in November and December.

The winter of 1865-69 was characterized by exceedingly heavy snow-falls.

FREEZING OF ST. LAWRENCE AT MONTREAL.

From the year 1824 up to 1868, a period of 44 years, the ice left the River St. Lawrence in front of this city, varying from the earliest period, 16th March (1825), to the latest, April 28th (1855), showing a variation of 43 days during this period of 44 years, but these early periods are not confined to late dates, but occurred in March, 1825, 1828, 1834, and 1842; the intervening years vary from 3rd to the 28th of April, inclusive.

ICE OF THE HUDSON, N. Y.

JANUARY 26th.—The various ice dealers are busily at work harvesting the crop, and there are good prospects for a large production of this article. Above and below the bridges the ice ranges in thickness from eight to twelve inches, and is pronounced clear and solid. At Troy eight-inch ice is being harvested, and at points in the Upper Hudson the ice averages nine inches in thickness.

As regards weather recollections, says one of our "oldest inhabitants," it accords with my long experience that nothing is more general than the facility with which they lapse into oblivion, and that, too, not unfrequently within a short period after the facts have transpired. In this, as in many other departments of mundane affairs, we are very liable to fall into unwitting errors by bearing in memory only intermittent, salient facts, whilst, from the feeble impressions made by less striking, but more ordinary and continuous phenomena, we fail in our general summary, and, in consequence, enunciate conclusions alike antagonistic to rational judgment, and the establishment of useful knowledge.

The *Fargo Argus* tells of a new scheme for the winter navigation of the Red River. Captain Allsop, of the steamer "Pluck," has obtained a traction engine, and to this he will attach a number of bob sleighs, forming, as it were, a steam engine bob sleigh freight train on ice. The plan is to make regular trips up and down the river, running on the ice and bringing wood to Fargo and taking merchandise to the settlements along the river banks. He calculates that he will make six miles an hour, which will scoop the telegraph company on speed.

Snow-falls occurred generally throughout Canada and New York State on the 10th of January, 1881: this year (1882), a general snow-fall took place on the 11th. The recent heavy storm on the 22nd January had likewise its counterpart upon the same day of the month in 1881. Thus does the weather repeat itself.

STORMS ON THE SUN.

Those who have witnessed the devastations which mark the path of the cyclone and the hurricane may have some conception of the enormous power there is in the wind, when it lays low, as if they were but stalks of waving grain, gigantic trees of the forest that have withstood the ordinary storms of centuries, but however enormous their power may be, the most terrific storms that ever sweep their way over the surface of the earth must be as pigmies in force to the storms which sweep the surface of the sun.

A few words concerning commotions on the sun may not be uninteresting to our readers. In the study of the sun many phenomena have demonstrated that its mighty surface is never in a state of repose, but upheavals, explosions, and the rushing hither and thither of incandescent and vaporous matter are constantly going on.

During the periods when spots are most frequent these are often seen which have a whorled appearance, and those having such an appearance are believed to have a rotary motion, and to move very much as terrestrial cyclones do, and they may be regarded as solar storms. The velocity with which these solar storms move is very great, but they sometimes extend over a space several times as large as the whole of the earth's surface. It has been computed by eminent astronomers that these storms move with the astonishing velocity of 40 or 50 and sometimes even as much as 120 miles in a single second. We can form but a very inadequate conception of the mighty force which must accompany these solar storms when we think of the havoc which air leaves in its wake when it moves that number of miles in an hour.

The most interesting times for studying the stormy movements on his surface are during total eclipses of the sun, and it is to observations made on such occasions that we are indebted for much that has been found out about solar commotions in times that are quite recent.

Probably the most interesting thing about solar storms is their connection with magnetic disturbances on the earth. Much yet remains to be found out concerning this subject, but it is already well known that the phenomena of auroras, earth currents and magnetic storms come in periods, and that these periods are coincident with solar disturbances. One of the most remarkable cases of this coincidence, and that which awakened a new interest in the theory that was announced for the first time only nine years before, was that which occurred in 1859, when two English astronomers, Carlington and Hodgson, noticed a curious outburst of two very bright patches upon the sun, which remained visible for about five minutes, and during that short time traversed a space of nearly 35,000 miles.

At the very time that they were witnessing this strange sight, as was afterwards discovered on comparing the times, there was noticed at many places a marked disturbance of magnetic instruments, occurring simultaneously with the outburst on the sun, which was followed on the same day by a terrible magnetic and electric storm, which greatly disturbed telegraphic communication, and in some cases set fire to offices; and besides auroras were seen. In the fall of 1871 a similar sun-storm was witnessed by Prof. Young, Cincinnati, who calculated that its velocity was as much as 166 miles per second, and that some fragments of matter were thrown to a height of 200,000 miles above the sun's surface. It likewise was followed by magnetic disturbances and by brilliant auroral lights, perhaps the most brilliant that have occurred in this latitude (*Cincinnati Comm.*)

WAVES OF WEATHER.

The mildness of the present December, the *Mail* (Toronto) states, is due to the prevalence of southerly and south-westerly winds. Of course it is, or that is one way of putting it, but what brought about this unusual direction of these winds, this month, is the question I should like to see satisfactorily answered. It is generally admitted that could we but ascertain, in advance, the average direction of the wind for the respective months of the year, we should be tolerably well advised respecting the general character of the seasons—Spring, Summer, Autumn and Winter. This we cannot do, however, so we must look to other sources and data for our views on this interesting and important subject. And what other source can we look to? I reply to the "waves of weather," or, more correctly speaking, to the waves and undulations of pressure and temperature. This new method of forecasting the seasons is treated of in one of the chapters of my almanac and "Weather Record." By it, I, as early as September of the year 1880, formed the forecast for the year 1881, which stands to-day amongst the most accurate of all my attempts. This foretold three marked and distinct periods of weather for the year now closing, namely, 1st, cold and heavy snow-falls for the entry of the year, and a severe Winter over the North American continent; 2nd, a very hot summer, with severe storms, and 3rd and lastly, a singularly mild and open Autumn up to the end of the year. Just now I speak of this general prediction as it was written, printed, published, and as it stood before the public in my 1881 Almanac for upwards of ten months before an alteration was made.

The alteration I refer to I shall allude to further on. Meantime I wish to show now on what grounds this prediction was arrived at. My weather charts consist of the detailed undulations of both the temperature and the atmospheric pressure of a long series of years. By a close study of these I note that as certain periods have undulated, so have others widely and irregularly separated. We find, for example, periods or long spaces on these charts wherein the undulations are of even duration and regular in outline, resembling great even and rolling waves of deep water. These represent long steady winters and warm summers, or, when shorter, alternate warm and cold periods during both summers and winters. Again I find periods of abrupt undulations, which, in the article referred to in my Almanac, I have likened to "chop waves." These represent winters of abrupt changes from thaw and mildness to moderate or intense cold, and summers of like variable features. Yet again, I observe periods wherein such abrupt or sharp undulations are separated by the evenly undulating waves first referred to. Now by watching closely the general outline of these undulations for the past and present, I find it often possible to strike off very closely what is likely to be the outline of an approaching period (season or seasons, according to the confidence felt). If, for example, after a period of extremely abrupt and irregular undulations I observe these quieting down into more regular and lengthened waves, I can or have in many instances sketched out with considerable accuracy the chief features of the weather for a number of weeks and even months in advance. Of course the unexpected return of the "chop waves" is a freak to be guarded against, and this sometimes, and most unexpectedly, occurs to the "prophet's" discomfiture, but such a recurrence is exceptional. In like manner, I note immediately the breaking up of the longer and regular undulations into the first of an approaching period of abrupt changes or "chop waves," and get an insight into the characters of the approaching period. Thus it was that towards the close of 1880 I foresaw two great undulations of waves of weather for the year 1881. These were but two and of about equal duration or length. The first a great downward curve and the second a similarly great upward curve. In other words simply a lengthened period of low, and another corresponding one of high, very high, temperatures. The first I sketched out as embracing from November (1880) to May 1881; and the other, May to January, 1882—which proved absolutely correct. The first gave us the cold autumn and winter of 1880-81; and the other the summer of intense heat and drought so fresh yet in all our memories. And now our warm and

open autumn and first month of winter shows the "high" curve slowly but steadily terminating towards the medial line of the year's temperature. It will then go below this, probably reach as low as the curve of last winter did, run along this level through a portion of January and February, and then recover itself slowly through March, April and May, causing a cold, blustry March and cold spring—possibly a cool and backward summer for 1882. I may return to this subject again, and refer to "Weather Cycles," "Recurring Periods," and "Periodical Compensation."

BAROMETER.

In hanging a barometer, the following points should be attended to:

1. Hang the instrument so that the mercurial column be quite perpendicular.
2. Let the scale be about five feet high, for facility of reading.
3. Hang the whole instrument in a good light, particularly the scale and the cistern.
4. Let it be hung in a position in which it will be exposed to as little fluctuation as possible of temperature; a wall heated by a flue, and positions which expose the instrument to the heat of the sun or to that of a fire, are very objectionable.

WHAT THE BAROMETER INDICATES.

A high and steady state of the barometer indicates, generally, dry, calm, clear weather, with heat in summer and hard frost in winter. A low and fluctuating state of the instrument indicates cloudy, wet or windy weather, with, as a general rule, cooler weather in summer and mildness in winter.

A rapid rise in the barometer to a considerable height is generally followed by as rapid a descent of the mercury, and vice versa. Hence rapid variations indicate changeable weather, such as one day wet and windy, and another dry and calm.

The barometer usually sinks lowest and with greatest rapidity immediately previous to and during the prevalence of very high winds, and it continues to fall as long as the velocity of the wind is increasing, but shortly before the wind abates the mercury begins to rise with considerable rapidity. The reason for this rapid rising of the mercury is owing to the atmospheric equilibrium being somewhat restored by the influx of air before the acquired velocity of the atmospheric current is checked.

A slow and steady rise of the barometer is likely to be followed by a high and steady reading for a length of time; hence it prognosticates a continuance of calm and dry weather.

There is generally a rise in the barometer when the wind changes from a warm to a cold direction, and a fall when the change is from a cold to a warm point. For example: when the shift is from S. W. to N. E. in winter, the mercury usually rises, but when from N. E. to S. W. it falls. The former commonly indicates dry weather; the latter rain.

A prolonged high reading of the barometer is almost invariably followed by a prolonged low reading, and vice versa. Hence the former of these conditions, which is usually attended by calm, dry weather as soon as the change takes place, while the latter condition is indicative of a continuance of dry, calm weather after the change has taken place. "Long fair, long foul," is an ancient, but trite saying.—*En. Brit.*

The storms throughout New York, the Middle States and Canada, as well as the snow falls and gales in Great Britain towards the close of January, I was enabled, by my theory of weather relation, ships, to give warning of as early as the 18th of the month, and several days before any intimation was given by the Signal offices.

26½° below zero was reached by the mercury at Toronto during the month of January, 1859, the coldest on record, up to date. Last year (1881), and about the 1st or 2nd of February, the mercury fell 22° below zero in the same city.

Snow.—The opinion prevails that snow is a whitish substance, and that it is used for sleighing purposes in certain hyperborean regions.

THE WEATHER BULLETIN,

PUBLISHED MONTHLY BY

HENRY G. VENNOR, F. G. S.

OFFICES:

No. 210 ST. JAMES STREET,
MONTREAL, CANADA.

ANNUAL SUBSCRIPTION, \$1.00.

ADVERTISING RATES.

The last two pages of this paper will be used for advertising purposes, but no cards will be permitted in the body of the texts.

CONTENTS OF No. 1.

- PAGE 1.—Prospectus: "Montreal as a Winter Resort;" "February;" "Editor's Drawer;" "Will it be a 'Couplet' or a 'Triad.'"
- PAGE 2.—"Cold Winters;" "Extraordinary Seasons;" "The Open Winter of 1877-8, in the North-West;" "The Weather as it was and is;" "Years of Heavy Snow-fall;" "Freezing of St. Lawrence at Montreal;" "Ice on the Hudson, N. Y."
- PAGE 3.—"Storms on the Sun;" "Waves of Weather;" "Barometer."
- PAGE 4.—"Old Saws;" "The Character of the Coming Winter;" "A Long Range Prediction."
- PAGE 5.—"Law of General Compensation;" "Losses at Sea, 1881;" "An Early Snow Storm;" "Fall of 1881—November;" "January Weather;" "Storms and Blizzards, Chicago, Feb. 1881;" "A Japanese Winter."
- PAGE 6.—"Weather Prognosticator;" "Influence of Forests upon Climate;" "The Recent Storm and Dip in Albany, N. Y.;" "The Goose-Bone;" "Birds and the Weather."
- PAGE 7.—"The Cold Snap of January in Canada;" "Weather Forecasts;" "Weather Clips."
- PAGE 8—Advertisements.

"OLD SAWS."

"When the Rivers and Swamps are full, Winter comes."

Some, I may say many, of the "old saws" have a great deal of truth about them, and the above is one of these. Winter often tarrys long until this special condition is fulfilled. The past summer (1881) was one of heat and drought. There was great and continual evaporation, but no, or but little, condensation and rain-fall. Consequently, lakes and rivers became exceedingly low and swamps dried up over a very extended area of country. The law of general compensation, however, has been at work, and the rains that the summer refused the autumn has given in abundance; and to-day we have to record even the other extreme, namely, an overflowing or superabundance of water. Now then, all is ready for winter, and it closes in forthwith. There are, however, variations and irregularities connected with this general truth which have to be borne in mind. It does not always follow that because waters are low and swamps dry, we are to expect no severity of cold. On the contrary, I have numerous instances on record of very early and severe cold during such seasons, when waters became ice-locked everywhere as early as the latter part of November and early portion of December, and the result was a water-famine. Such was the winter of 1875-76, when five days of intense cold at the close of November and the first week of December all but closed the mighty St. Lawrence, whilst small and less powerful rivers throughout both Ontario and Quebec were firmly sealed for the winter. But what followed? Why, a general break-up later on and at the entry of the New Year. All will remember the balmy, rainy New Year's week of 1876 and the warm January all through, when the rivers again became insecure, and many of these re-opened. Therefore it is not altogether safe to neglect to prepare for cold weather simply because "waters are low and swamps not yet full." I further

notice that where the heat and drought were not so noticeable a feature during the past summer (1881), as for example in Newfoundland and portions of the Maritime Provinces, in parts of the United States, and in the North-West, there winter set in early and quietly, and sleighing has been enjoyed already for several weeks; as it has likewise been along the whole range of the Laurentian Mountains to the north of the Ottawa Valley. It is by a careful study and comparison of such truths as the foregoing—many more of which yet remain to be discovered—that our attempts at forecasting the weather must ever be based; and though these attempts may for the present draw forth the ridicule and jeers of the non-thinking portion of our community, the time is fast approaching when this interesting and important field of investigation will force itself upon and command the attention of all thinking minds.

THE CHARACTER OF THE COMING WINTER.

The following revised and general prediction respecting the character of the then approaching winter, appeared in the *Montreal Gazette*, of November 20th, 1881, and after my Almanac had been completed. It was in part reprinted or quoted from by the *New York Herald* and by many other of the leading American journals:—

Were we to judge of this by our migratory birds this autumn, many of which have arrived unusually early, we should be inclined to suspect the approach of a very severe winter. On the other hand, and jumping skyward, if we are to believe what English and American scientists tell us about the activity on the sun's surface and the number and magnitude of "sun spots," we feel disposed to announce the probability of a continuance of heat or warmth and periods of considerable disturbances for the winter of 1882.

The early arrivals of northern birds, such as shore larks, Lapland longspurs and pine-grosbeaks, was this fall followed almost immediately by a frosty wave during the first week of October; but this was of but brief duration, and had the birds known more, they need not have fled with such precipitancy from their northern haunts.

In my own experience I have never yet found the movements of birds worthy of consideration in a weather point of view, except, indeed, as foretelling the approach of such a temporary "cold snap" as that we have recently experienced, and which of itself indicates the very reverse of an early and severe setting in of winter; for early cold and bluster, in general, is not lasting, and is almost invariably followed by an open term.

As to the activity of the sun spots, and the great magnitude of some of these at the present time, there can be no manner of doubt, but that such conditions should effect the weather around our earth must be as yet a more matter of conjecture. If it could be proved that the sun spots had any connection with the heat and drought of last summer on the American continent, we might naturally infer, from the increased activity of these and their growing proportions, a high average temperature for the winter months. Disregarding, however, these sun signs and commotions, I would here state that there were other signs, and from very different sources than those just mentioned, of the approach of the "hot and dry summer" of 1881. These may or may not yet be generally accepted by meteorologists, but, notwithstanding, they were sufficient to enable me to give a very early notice of what proved to be "a very hot and dry season." I refer to weather cycles, or the recurrence of similar weather conditions at irregular but ascertainable intervals of time. Into this oft-mooted subject it is not my intention, at present, to enter, having devoted considerable space to it in my almanac for the coming year.

This hot and dry season has now passed, and a winter of some sort has got to be experienced. Some say it will be this, and others that, but none can give any clear reasons for their statements—it is all

vague conjecture. Perhaps the majority of prognosticators lug to the severe view of the winter, on the very unreliable principle of opposites, or—which is the same thing—the law of general compensation, as regards heat and cold, drought and precipitation; forgetting that in this very principle the past summer was linked more closely to the winter of 1881 than it can possibly be to the winter of 1882. For, in order to fulfill this law of compensation, a great deal of both heat and dryness was required to make up for the cold and precipitation of last winter. The year 1881 thus gives us a very marked example of annual compensation. It closes with accounts well squared, and leaves no balance to be brought forward into the books of 1882. Consequently, we must turn to some other source for our "probabilities" for the approaching year. And, here comes in the value of a good array of past records of the weather and weather charts. By means of such we see that periods of unusual cold or heat have in the past usually extended over more than a single season. We note a great number of couplets and even triads of years of similar weather, and but very few, and these widely separated, in which intense cold or great heat was confined to a single year. By closely following the action of the weather generally of the present time, and at the same time possessing a thorough knowledge of its general behavior in the past, the observer intuitively conceives what is required for the fulfillment of Nature's laws for an approaching period or seasons. Distinct and definite reasons for his conclusions he may not be able to give, if suddenly called upon, but he, notwithstanding, adheres firmly to his impressions concerning the future, and is generally correct. Supported thus by such records of by-gone years and carrying in my mind a clear view of the ups and downs of the twelve months just passing away, I look still to a further continuance of the warm wave on our continent during the approaching winter. Broken, this may and will be, by waves of low temperature, but these will be but brief duration as compared with the protracted periods of mildness and warmth. As usually happens in such winters there may be an advanced and severe term of cold and snow as early as October or November. If so, look out for an open "Christmastide."

Thus, though disregarding the sun and sun-spot theory, I am compelled to predict an open winter.

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 farther than this and to specify dates for the snow-falls 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 cold and 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 a cold 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.

LAW OF GENERAL COMPENSATION.

The following may be of interest to those of your readers who watch the weather. It is an illustration of the manner in which the law of general compensation in our yearly weather log is fulfilled:—

The year 1875 entered cold and with plenty of snow; it went out mild and rainy.

The year 1876 entered mild and wet; it ended with heavy snow-storms.

The year 1877 entered snow and storm; it ended with mild and no snow.

The year 1878 entered cold and bare; it ended with plenty of snow.

The year 1879 entered plenty snow; it ended with mild and rainy.

The year 1880 entered mild and wet; it ended with cold and deep snows.

The year 1881 entered cold and deep snows, it ended with mild and no snow.

Thus 1882, entering, probably cold with but little snow, is likely to close with heavy snow-falls and bluster. In such a manner do I get at my first outlines of the weather in advance, and subsequently catch at the outline of the whole year by comparisons of a like nature too numerous to mention here. I would further remark that I changed my mild prediction for this December at the last moment and after the almanac was in form, because I thought there were indications of the weather sliding into last year's groove, and because I inferred from the great and prevalent storms on the Atlantic and gales in the Gulf of St. Lawrence that December would give us rapid transitions from southerly to northerly winds. In this I was mistaken. You will now notice that the year will terminate or New Year enter with a fairly "cold dip," but there will be rains and slush in January again as in 1878.—*Witness.*

Montreal, December 24th, 1881.

The predicted dip came on the very last day of the year, and cold weather continued through the first week of January, when on the 8th there were heavy rains at many points. The fluctuations of temperature during January have been both frequent and abrupt, and the line, as represented on a weather chart, is of the most zig-zag description.

LOSSES AT SEA, 1881.

The greatest number of disasters at sea in any one month was in October, and the records for that month are unprecedented within the merchant marine. The total number of steamships lost in October was 32, of which 18 were British. France, Germany and Norway lost two each; Austria, Belgium, Brazil, Chili, Holland, Russia, Spain and Sweden one each. Of sailing vessels 236 were lost, including 84 British, 40 Norwegian, 27 German, 7 French, 15 Swedish, 11 Italian, 10 Dutch, 10 Prussian and 5 American. It is estimated that no less than 43,033 tons of produce were lost in the October gale, but most of the vessels lost were coal laden. The hurricanes for November were reported as more severe than those of October, and to have been attended with still greater losses. Storms continued to rage upon the Atlantic up to the 10th of December.

AN EARLY SNOW-STORM.

KANSAS CITY, Nov. 12.—The Santa Fe trains are delayed by a snow-storm. For nearly thirty-six hours it has been snowing hard in western Kansas, Colorado, and New Mexico. From Lakin west to Pueblo there are six to eight inches of snow. From La Junta west there are eighteen to twenty inches. The cuts are full, and the wind is drifting it badly. This is the heaviest snow-storm in New Mexico and Colorado that the Santa Fe Railroad has ever entered.

FALL OF 1881—NOVEMBER.

On the 23rd of November, 1881, there was the first sleighing at Albany, N. Y.

There was two feet of snow over the Midland Counties of England on the entry of November, 1881.

There was a snow blockade at Omaha as early as the 10th of November.

Snow blockades West and South-Western States (Kansas) on the 14th and 15th of November.

Snow, sleighing, and below zero in the North-West on the 15th and 16th.

Below zero in portions of the State of Maine on the 17th.

First real wintery "snap" at Montreal, Ottawa and Quebec, with sufficient snow for sleighing, November 20th.

Lake Beauport, P.Q., frozen over on the 20th.

Below zero in North-West again on the 20th and 21st.

Snow in Northern New York State, 22nd and 23rd.

Gales in Gulf St. Lawrence and Newfoundland, 23rd and 24th.

Snow-falls along Hudson Valley, New York, on 24th.

Snow-falls and cold weather generally over Northern United States and Canada, but not at Montreal or Quebec, 24th and 25th.

Sleighing at Troy, N. Y., and adjacent points on Christmas Day.

Storms in Great Britain and gales on Atlantic, Christmas week.

Frosts in Louisiana, Christmas.

Sleighs out again for second time at Montreal, 27th.

One foot of snow at Quebec, 27th and 28th.

Great storm on Atlantic, Great Britain, and Magdalen Islands, with wrecks and loss of life, at close of November.

The foregoing clippings show at a glance the wintery character of November, 1881, but most people forgot these during the succeeding mild December.

The Red River was frozen across on the 14th inst. for the first time. It was frozen across last year on the 12th of November, two days earlier. The Assiniboine River was frozen across on Thursday, the 10th inst., the very same day as last year.

JANUARY WEATHER.

The following sketch of the weather for the month of January, taken from the *Star* of this city, has come very close to what has actually been experienced:—

"Mr. Vennor says:—The 'chop waves' referred to in my last letter have commenced and are likely to continue through January. These will give this year (1882) some of the most abrupt changes of temperature on record, from zero and well below to mildness again and rains. The first week will probably give a very severe dip, which at the present I think may reach from 10° to 15° below zero, and last about four days. This will then rise abruptly to moderation, mildness, and from snow to rains. Two other cold 'dips' look probable for the month, with mild slushy periods between. How the river will act it is difficult to say, but I fear the frequent returns to mildness will keep it 'shaky.'"

During the first week the mercury did fall to 10°, 12° and 15° below zero, at a number of points, returning abruptly on the 7th and 8th to, first snow and sleet, then rain. The river is hardly yet sound, and was kept "shaky" up to a very late date in the month.

The following predictions were unfortunately crowded out of the *ALMANAC*, but were published in the *Montreal Gazette* in its issue of October 3rd, 1881. It was also reproduced by nearly all of the leading newspapers of the country.—

PAGE FROM "VENNOR'S ALMANAC," 1882.

(From advanced sheets "Vennor's Almanac," by permission.)

In Newfoundland the winter of 1882 is likely to be extremely severe and stormy.

A warm wave is likely to occur over a large portion of North America during the month of November, 1881, and again during January and February, 1882.

A frigid wave may be expected towards the close of November and entry of December, 1881.

The winds and storms of March will probably arrive ahead of time, and render the closing days of February exceedingly disagreeable.

Minnesota is likely to experience more wintry weather than many neighboring sections.

The latter part of April and entry of May, 1882, will remind one of winter again, and the spring is likely to be cold and backward generally.

The winter of 1882 is not likely to be characterized by heavy snow-falls on this side the Atlantic.

In Western Canada, and sections south of the Lakes, navigation may remain open all the year, or close but for a very brief period.

December, 1881, will be a month of storms in the Lake region.

The summer of 1882 will be generally unfavorable to agriculture, owing to cold and wet weather.

Western sections will probably suffer more from rains and floods than thunder storms or cyclones during the summer of 1882.

Volcanic disturbances are likely to be exceedingly active on the American continent, and will probably occur in entirely new sections.

There will be brief periods of severe cold during the winter of 1882, and longer ones of warmth.

STORMS AND "BLIZZARDS," CHICAGO, FEBRUARY, 1881.

February 1.—One foot snow-fall last night and still snowing; 100 men employed in clearing street car lines; trains from 10 to 20 hours late.

" 6.—Storm of sleet west of Chicago; wires blown down.

" 17.—Over half a foot of fresh snow has fallen after midnight, and there are no indications of a "let-up."

" 18.—Snow and drift; fall is from 8 to 10 inches.

" 23.—Storms and drifts west of Chicago.

" 27.—Snowing heavily; trains delayed.

" 28.—Great snow blockade, Chicago and Western States.

Some of these dates are likely to again bring their storms this year.

A JAPANESE WINTER.

(Correspondent of the *San Francisco Chronicle*.)

YOKOHAMA, December 9. The weather is getting quite cold. The thermometer has read as low as 33 degrees within the past week. A skating club is being organized by the gentlemen of Yokohama, who are expecting rare sport in that line by New Year. Though this place is something south of San Francisco, it is very much colder in the winter here than there, snow falling oftentimes to the depth of six inches. A knowledge of this fact should make those who admire the *Camelia Japonica* assured that they can as well be cultivated in San Francisco in the open air as here, and here they are no more protected than are the pines or any of the native shrubs. I see them placed in all situations, in the shade as well as where they have the sun on them all the day.

WEATHER PROGNOSTICATOR.

It is said that the following table and accompanying remarks will give the kind of weather probable to follow the entrance of the moon into any of her quarters, but the publishers of the ALMANAC do not vouch for its accuracy—leaving it to the reader to test its truth by comparisons and observations:

Time of Change.	IS SUMMER.	IS WINTER.
Between midnight and 2 in the morning.	Fair.	Hard frost, unless the wind be S. or W.
Between 2 and 4, morning.	Cold, with frequent showers.	Snow and stormy.
Between 4 and 6, morning.	Rain.	Rain.
Between 6 and 8, morning.	Wind and rain.	Stormy.
Between 8 and 10, morning.	Changeable.	Cold rain, if the wind be W.; snow if E.
Between 10 and 12, morning.	Frequent showers.	Cold and high winds.
At 12 o'clock, noon, and to 2 P.M.	Very rainy.	Snow or rain.
Between 2 and 4, afternoon.	Changeable.	Fair and mild.
Between 4 and 6, afternoon.	Fair.	Fair.
Between 6 and 8, afternoon.	Fair, if wind N. or S. W.; rainy, if S. or S. W.	Fair and frosty, if N. or N. E.; rain or snow, if S. or S. W.
Between 8 and 10, afternoon.	Fair, if wind N. or S. W.; rainy, if S. or S. W.	Fair and frosty, if N. or N. E.; rain or snow, if S. or S. W.
Between 10 and 12, afternoon.	Fair.	Fair and frosty.

REMARKS.—1. The nearer the time of the moon's change, first quarter, full, and last quarter to midnight, the fairer will the weather be during the seven days following. The space for this calculation occupies from 10 at night till 2 next morning. 2. The nearer to mid-day these phases happen, the more foul or wet weather may be expected the next seven days. The space for this calculation occupies from 10 in the forenoon to 2 in the afternoon. 3. The phases happening from 4 till 10 in the afternoon may be followed by fair weather; but this mostly depends upon the wind. 4. If a storm arises from the East on or immediately preceding the time of the spring equinox, or from any point of the compass near a week after, then, in either of these cases, the succeeding summer is dry four times out of five; but if a storm arises from the S. W. or W. S. W. on or just before the spring equinox, then the summer following is wet five times in six.

INFLUENCE OF FORESTS UPON CLIMATE.

Forests moisten the air all around and above them and in their midst. Further, forests produce abundant dews, and dews themselves play no small part in forwarding vegetation. In the driest seasons, dew still refreshes the parched earth. The facts, so far ascertained with certainty, are themselves, without one additional word, a sufficient comment on the ruinous folly that lays the axe of destruction at the root of our beautiful trees. They also point to the need of immediate forest-planting in localities where a sufficient amount of woodland does not already exist. The proper proportion is said to be from twenty-five to thirty per cent. Scientific men have found out these facts by their investigations and by the aid of the *hygrometer*, maximum and minimum thermometers, an *evaporimeter*, a *pluviometer*, a *psychrometer*, and various other intellectual instruments.—*Cincinnati Commercial*.

THE RECENT STORM AND "DIP" IN ALBANY, N. Y.

Saturday afternoon, 21st January, the heavy snow turned to rain, and the thousands of pedestrians mixed and kneaded the "beautiful" into slush. Saturday night everybody wearily waded around and wanted it to freeze up. It did congeal late Sunday morning, and the church-goers were greeted by a gale that blew the "falling" snow into sharp, cutting horizontal lines. Aided by the slippery sidewalks, the wind placed many a pedestrian in an easy position—after it was attained. All day yesterday it blew great guns, and those who had not bound blacksmiths' rasps or coarse-grained sandpaper to their boots, wished, while climbing the everlasting hills of the city, that they could send their toe nails on an exploring expedition after something tangible. Those who descended the hills last night sailed without compasses, and frequently brushed up acquaintances with tree-boxes and lamp-posts. Shutters slammed with sounds of impending danger overhead, and swinging signs shouted "Look out below!" Everybody appeared to be doing the tight rope act without a balancing pole, and as the street cars went in directions diametrically opposed to the desires of journeying unfortunates, the fun of living in the temperate zone was commented upon in language filled with the chilling blasts and cutting sleet of human nature. In all the city there were but two classes of persons completely, supremely happy. They were the firemen and the policemen.

THE GOOSE-BONE.

VERY OFTEN CORRECT.

I have long read about the "Kentucky Goose-Bone," as a Weather Prophet, and have of late years received many letters requesting me to test it, but hitherto have not done so; but on a number of occasions I have taken the trouble to note the predictions drawn from this source by others, and must confess that their general accuracy has surprised me. The following, from the *Louisville Post*, is the reading for the present season:—

"The readings of the goose-bone indicate a motley winter. There will be a good deal of snow and a few cold days, but no protracted cold weather. In the month of December there will be no very cold weather. During the last of the month there will be a few days when fires will be cheerful and an overcoat comfortable. It will be an exceedingly disagreeable month for outdoor work, with snow or rain every day or two. The probabilities are for a wet, gloomy Christmas. This kind of weather will continue on through January, with a few cold days sandwiched between rain and snow. About the middle of January there will be a few clear, cold days, when the mercury will go down below zero. The 15th and 16th of January will be as cold days as any experienced in this latitude. The latter part of the month will be wet and gloomy. There will be more genuine winter weather crowded into the little month of February than in December and January, but there will not be any intense cold. With the exception of the few days about the middle of January, it is not likely that the mercury will go far below zero. The goose-bone has long been an honored weather prophet. In some of the back counties in Kentucky the farmers make all their arrangements in accordance with the predictions of the goose-bone. In some localities the goose-bone is laid aside, labeled with the year, and it is said that one old farmer in Breathitt county has the bones extending back for more than forty years, and in all that time it is asserted that the bone has never been mistaken as to the weather. To read correctly the winter of any year, take the breast-bone of a goose hatched during the preceding spring. The bone is translucent, and it will be found to be colored and spotted. The dark color and heavy spots indicate cold. If the spots are of a light shade and transparent, wet weather, rain or snow may be looked for. There are a good many people all over the country who pin their faith to the goose-bone. Of all the weather prophets it is the most honored. The little ground-hog disgraced himself long ago, and now very few people ever watch Candlemas day, and hogs

melts are no longer trusted in. A few years ago, when Tice and all human weather prophets predicted the most severe winter ever known, the goose-bone told of a mild open winter. The future unrolled just as the bone said it would, and poor old Tice had to change his predictions every day. The goose-bone never changes and never fails. The reporter has examined three bones, one from south-eastern Kentucky, one from Jefferson county, and one from Laporte, Ind. They are identical to one another, and the reading here given will be found the same on the breast-bone of any goose hatched last spring. Cut this out, lay it aside for reference, and as you crowd up close to the fire on the 15th of January, you will be convinced of the great unknown power of the goose-bone."

Now, had the goose-bone only put the cold weather for the 17th and 18th of January, it would have been correct to the letter, up to these dates.

BIRDS AND THE WEATHER.

FROM MANY SOURCES.

Gay, in his first "Pastoral," tells us how—
When swallows fleet soar high and sport in air,
He told me that the welkin would be clear.

In referring to the Kingfisher, Dryden says:—

Amidst our arms as quiet you shall be
As halcyons brooding on a winter's sea.

According to another idea, not yet obsolete, a dead Kingfisher suspended from a cord always turns its head in the direction from whence the wind blows; a superstition to which Shakespeare refers in *King Lear*, when he makes the Earl of Kent say:—

Turn their halcyon beaks

With every gale and vary of their masters.

In parts of England and Scotland, the plaintive notes of the Chaffinch are regarded as a sign of rain, and the boys sing:

Weet, weet!
Dreep, dreep.

The loud and shrill cry of the Peacock is another rain warning—

When the Peacock loudly bawls,
Then we'll have both rain and squalls.

The Woodpecker's note denotes wet, a notion which prevails on the Continent, where it is commonly known as the "rain bird."

Here follow other examples from a novel collection in an old scrap-book.

If the cock crows going to bed,
He's sure to rise with a watery head.

If the cock moult before the hen,
We shall have the weather thick and thin;
If the hen moults before the cock,
We shall have weather hard as a block.

If fowls roll in the sand
Rain is at hand.

When ducks are driving thro' the burn,
That night the weather takes a turn.

Wild geese, wild geese guggling to the sea,
Good weather it will be.

Wild weather, wild geese ganging to the hill,
The weather it will spill.

When rooks fly sporting high in air,
It shows that windy storms are near.

When doterel do first appear,
It shows that frost is very near;
But when the doterel go
Then you may look for heavy snow.

Sea gull, sea gull, sit on the sand;
It's never good weather when you're on the land.

According to Wilsford, "herons in the evening flying up and down, as if doubtful where to rest, presage some evil approaching weather."

The Cuckoo is another—

When the cuckoo comes to the bare thorn,
Sell your cow and buy your corn;
But when she comes to the full bit,
Sell your corn and buy your sheep.

The dismal and continued screaming of the Owl is a bad sign, being supposed to prognosticate storms, tempestuous weather, etc., etc.

But interesting as the foregoing may be to the "old verse" collector, they are of but little service to the "Weather Prophet" of to-day.

THE COLD SNAP OF JANUARY IN CANADA

ALPHABETICALLY ARRANGED.

Below Zero.	Below Zero.
Arnprior (Ottawa Valley).....25°	Portland.....20°
Alliston.....23°	Prescott.....25°
Acton, P.Q.....20°	Port Hope.....18°
Barrie, Ont.....25°	Pembroke.....29°
Belleville, Ont.....14°	Picton.....26°
Brampton.....8°	Paris.....15°
Bracebridge.....30°	Port Colborne.....4°
Bobcaygeon.....30°	Port Dalhousie.....0°
Bowmanville.....20°	Quio.....29°
Colburg.....18°	Renfrew.....26°
Cayuga.....7°	Richmond.....22°
Cookstown.....16°	Rosseau.....35°
Consecon.....18°	Seaforth.....6°
Coulouge.....26°	Sharon.....28°
Chichester.....12°	Sherbrooke.....17°
Chatham.....0°	Simcoe.....0°
Clinton.....4°	St. Catharines.....5°
Collingwood.....10°	Sorel.....25°
Drayton.....15°	Spencerville.....23°
Dublin, snow-storm.	Stayner.....18°
Dundas.....8°	Sarnia.....6°
Dunannon.....10°	Streetsville.....13°
Deseronto.....20°	Stratford.....5°
Durham.....15°	St. Johns, Que.....20°
Elgin.....19°	St. Thomas.....3°
Elora.....18°	Tottenham.....24°
Fergus.....18°	Thurold.....6°
Formosa, snow-storm	Tilsonburg.....0°
Georgetown.....18°	Teeswater.....19°
Galt.....10°	Toronto.....13°
Goderich.....0°	Uxbridge.....33°
Gravenhurst.....28°	Underwood.....0°
Guelph.....13°	Vandreuil.....35°
Hanover.....18°	Victoria Farm.....25°
Hillsburg.....26°	Walkerton.....18°
Harriston.....15°	Wingham.....23°
Ingersoll.....6°	Welland.....0°
Kingston.....19°	Woodstock.....4°
Kemptville.....25°	Whitby.....16°
Kinmount.....20°	
Lindsay.....28°	
London.....0°	
Lucknow.....23°	
Meaford.....5°	
Markham.....15°	
Merrickville.....25°	
Milton.....12°	
Mitchell.....12°	
Millbrook.....26°	
Montreal.....26°	
Morrisburg.....20°	
Minden.....30°	
Mount Forest.....14°	
Newcastle.....26°	
Newmarket.....25°	
Niagara.....5°	
Newboro'.....25°	
Napanee.....12°	
Owen Sound.....18°	
Orangeville.....20°	
Oshawa.....20°	
Ottawa.....23°	
Parry Sound.....30°	
Perth.....20°	
Peterboro'.....20°	

ADDITIONAL.

Aurora, Ont.....36°
Cape Vincent, N. Y. 26°
Chichester.....30°
Fergus, Ont.....30°
Gatineau Mills.....33°
Glen Falls.....26°
Grenville.....30°
Hawkesbury Mills. 29°
Keesville.....24°
Lake George.....25°
Lavenir, Que.....25°
Morrisburg, Ont.....24°
New Bridge.....25°
Norwich, N. Y.....33°
Owen Sound.....24°
Palmerston, Ont. 40°
Pembroke.....40°
Plattsburg.....25°
Port Henry.....22°
Quio, Que.....32°
Saratoga.....36°
St. Jacques, Que. 31°
Whitehall.....40°
Whitehall.....35°
Wrexeter, Ont.....35°

Many of the very low readings are probably due to poor instruments, namely 38° and 40°.

Henry G. Vennor announces that he is prepared to receive orders for his MONTHLY WEATHER BULLETIN, for 1882, which will be ready for subscribers the latter part of this month. From all that can be learned, the publication will prove a very popular, as well as valuable one, and should be subscribed for by all residents in the United States. Mr. Vennor has proved himself to be good authority on meteorological matters, and whatever he writes upon the weather is interesting and instructive.—*Argus*, Albany, N. Y.

When storms sweep over the country during the latter part of January, the same conditions may be looked for in the same sections at the close of February.

WEATHER FORECASTS.

PREDICTIONS FOR FEBRUARY.—PROFS. MANSILL, TICE, DE VOE, AND VENNOR.

The various predictions for the first part of February are as follows:—

The temperature of February should average a little above the mean of the season, though the month is likely to be stormy, both in Europe and the United States. There is considerable phenomena, particularly from the 3rd to the 6th. Mercury will be in a longitudinal line with Saturn and Neptune on the 3rd, and with Jupiter on the 6th. On the 3rd Mercury will be in its ascending node and in its perihelion on the 8th, hence it is reasoned that the principal disturbing positions of the planets appear to be located about the 3rd, and the 6th to the 8th.—*Mansill's Almanac of Meteorology*.

From the 20th to the 31st of January, rising barometer, falling temperature, clear or fair and cold if heavy storms have occurred. From the 1st to the 3rd of February, falling barometer, rising temperature, with very heavy storms, 4th and 5th, clear or fair and cold; 6th to 10th, clouding, ending in heavy storms about the 9th, this to be followed with clear or fair weather for two days, then will come threatening weather, ending in snow by the 15th.—*Tice's Weather Forecasts*.

BUFFALO, N. Y., Jan. 30.—A new weather prophet named A. J. DeVoe writes from Hackensack, N. J., that February will be a month long to be remembered on account of its frequent and heavy snow-storms and sudden falls in temperature. In Canada the weather will be very severe, the temperature will be lower than it has been for many years, and railroad traffic will be nearly suspended. All heavy gales will be preceded forty-eight hours by northern light, and if the bright rays drift from east to west the gale will be north-east, but if they drift from west to east the gale will be from the north-west.

The first three are more recent than Mr. Vennor's, and each is based upon a different system.

The remainder of January, mild and alternately rainy weather, with spring-like days, probably to the close of the month. The first days of February generally very mild; heavy rains west and south, with frost in northern section by the 3rd and 4th. The next week will be changeable, but generally mild; copious rains west and south, light snow-falls in Canada, Northern and Middle States, colder weather the last of the week.—*Vennor's Almanac*.

WEATHER CHIPS.

Dust was flying and carriages were out during February, 1878, at Montreal.

February is likely to enter with a general snow-fall, and probably a cold "dip."

Montreal and Ottawa are likely to escape most of the "storm periods" of the winter of 1882.

Ice on the Hudson River is thin, but clear and good. Such a winter as 1881 does not come every year.

Ottawa seems to have given lower readings of the thermometer for both December and January than Montreal this season.

And now the oldest inhabitant's memory has gone back on him, and he can't recall to recollection a "winter" like this.

The muskrats imperilled their reputation as weather prophets by building their nests for this winter exceptionally thick and warm.

Sleighting commenced for the winter of 1882 at Montreal on the night of the 6th January; considerably later than at Quebec or Ottawa.

The 22nd and 27th dates of January, 1881, were likewise characterized by gales and storms of snow throughout the United States and Canada.

The third week of February is likely to be of unusual warmth, and snow may disappear again in many sections of the Dominion at the bordering United States. During the last week of the month high winds and snow storms are likely to prevail, chiefly in Western sections.

The expected comet of 1812 has not yet put in an appearance. As some astronomers think that the last comet discovered in 1881, may be the long lost Lexell's comet, which nobody expected to see after Jupiter kicked it out as an intruder in his family of moons, it may not be too much to hope that the stupendous comet of 1264, which is now more than twelve years overdue, will also pay the sun another visit and make the night again brilliant with the glories of its train.

In connection with the weather we are reminded of a reminiscence printed some few years ago in *Harper's Weekly*, in which it was pointed out that the winter of 1816 was remarkably open everywhere, but that in the summer following the temperature was so cold as to kill all vegetation, that snow and frost were frequent visitors, and that the results, from an agricultural point of view, were so disastrous, that the year was referred to as "eighteen hundred and starve to death." It is not improbable that the summer of 1882 may be somewhat like that of 1816.

In the latter part of Dec., 1877, the *Napanee Express* remarked as follows:—"The experiences of the present season are truly remarkable. Nothing like it has been known since 1837, the year of the rebellion, and then considerable snow fell before Christmas. Untimely sports and amusements, such as yacht races, steamboat excursions, etc., were indulged in on Christmas, in different parts of the Province; ploughing has been done in several parts, and still the weather has more the appearance of spring than winter, and no telling when a change may occur."

Russell House,

OTTAWA, ONT.

The Proprietor of this well-known and very popular House begs to announce to his friends and the traveling public, that he is about to build a large addition to the house, and to refit and re-decorate the entire house in the most gorgeous manner, sparing no pains or money in making this house second to none in Canada. Beautiful reading-room and writing-room attached to office. In the centre of the office a beautiful rotunda is in course of construction and speaking telephones in connection with each room. This Hotel is admirably situated, being in the very heart of the city and contiguous to the General Post Office, the principal Banks, Public Buildings, Law Courts, Commercial Exchanges and Railway Offices. Montreal and Dominion Telegraph Offices in connection with the House.

Large and commodious Sample Rooms attached.

Rates according to location of rooms.

P. GOUIN,

Proprietor.

R. N. McCALLUM,

IMPORTER AND DEALER IN

STATIONERY,

FANCY GOODS,

TOYS, Etc., Etc.,

1305 St. Catherine St.

(QUEEN'S HALL BLOCK.)

MONTREAL.

Agent for "Vennor's Bulletin."

ESTABLISHED 1778.

THE GAZETTE

AN EIGHT-PAGE

Commercial & Family Newspaper

Published every morning. (Sundays excepted,) at Montreal the Commercial and Mercantile Capital of Canada.

SUBSCRIPTION, \$6 per ANNUM.

FACTS ABOUT THE GAZETTE.

1.—THE GAZETTE is the oldest newspaper in the Dominion.

2.—THE GAZETTE has a greater circulation than all the other English morning newspapers in the Province of Quebec combined.

3.—THE GAZETTE circulates among the upper, middle and wealthier classes, especially among the manufacturing and mercantile community of Ontario, Quebec and the Maritime Provinces.

4.—As a commercial paper THE GAZETTE is unequalled in Canada, and as a family paper it is attractive and newsy. It contains reports of the world's doings by telegraph every morning, in addition to regular letters from well-informed correspondents at London (Eng.), Chicago, New York, Newfoundland, and all the principal cities in the Dominion. It is printed from clear type on good paper.

5.—The Gazette is a real live, progressive newspaper.

6.—THE GAZETTE displays its advertisements with taste, and to the best advantage.

Special terms are made for subscriptions to Clergymen, Postmasters and Teachers.

RICHARD WHITE,Man. Dir. GAZETTE PRINTING CO.,
MONTREAL.**MERCHANT'S GARGLING OIL AS A FAMILY MEDICINE.**

We are now, and have been for some years, preparing the Oil free from stain, to be used as a common liniment for human flesh, extracting the coloring ingredient which has heretofore rendered it objectionable. This Oil possesses all the medicinal properties of that prepared with the dark tinge for horses and cattle, and will be found one of the best remedies for all purposes where a liniment is required that has ever been manufactured.

From J. K. FISHER, Uniontown, Pa., Jan. 31, 1857:—"Your Gargling Oil is doing much better here than formerly, since its virtues have become known and the bottles put up for family use, without stain, are much sought for."

The Gargling Oil called "Family Oil," although prepared intentionally for human flesh, answers as well for horses, vice versa, the dark Oil answers as well for human flesh, only it will stain and discolor the skin, but not permanently. Yellow wrapper for animal and white for human flesh.

GARGLING OIL LINIMENT AS AN INTERNAL REMEDY.

Merchant's Gargling Oil is a diffusible stimulant and carminative. It can be taken internally when such a remedy is indicated, and is a good substitute for pain killers, cordials and anodynes. For Cramps or Spasms of the Stomach, Colic, Asthma, or Internal Pain, the dose may be from fifteen to twenty drops, on sugar, or mixed with syrup in any convenient form, and repeated at intervals of three to six hours. Yellow wrapper for animal and white for human flesh.

MERCHANT'S GARGLING OIL is the Standard Liniment of the United States. Established 1833. Large size, \$1.00, medium, 50c., small, 25c. Small size for family use, 25c. Manufactured at Lockport, N.Y., M. G. O. Co., and sold by all druggists.

JOHN HODGE, SECRETARY.

MONTREAL PRINTING CO.

(LIMITED)

Fine Printers, Engravers and Binders.

Best and Cheapest Printing House in Montreal

Send for Estimates and Samples before placing Orders elsewhere.

245 ST. JAMES STREET,
MONTREAL.**COUNTERACTING A TENDENCY TO CONSUMPTION.**

It is well understood by medical pathologists that a tendency to consumption may be transmitted from parent to child. To overcome this tendency is a task to which the ordinary resources of medical science too frequently prove inadequate. There is, however, a means of counteracting it, to the reliability of which physicians themselves have repeatedly borne testimony. Not only has it been demonstrated by results there is no disputing, that

Northrop & Lyman's Emulsion of Cod Liver Oil and Hypophosphites of Lime and Soda

is a prompt and thorough means of relief when the lungs are already affected, but the proofs are equally positive that it imparts a degree of vigor to the breathing organs, which is the best guarantee against their becoming diseased. The constituents, phosphorus, lime and soda, are important elements in the physical structure, and these it supplies in a harmonious and easily assimilated form. A speedy gain in strength and flesh follows its use in all cases where the lungs are not hopelessly diseased. Sold by all druggists at 50 cents and \$1.00 per bottle. Prepared only by

NORTHROP & LYMAN,
TORONTO.**IMPORTANT TO FARMERS & SHEEP-OWNERS.****THOS. BIGG,**
Agricultural and Veterinary Chemist

By Appointment,
TO HIS LATE ROYAL HIGHNESS THE
PRINCE CONSORT, K.G.,
LEICESTER HOUSE, GREAT DOVER STREET,
BOROUGH, LONDON.

Begs to call the attention of Farmers and Graziers to his valuable
Sheep and Lamb-Dipping Composition,

Which requires NO BOILING, and may be used with either WARM or COLD WATER.

For effectually destroying the TICK, LICE, and all other insects injurious to the Flock, preventing the alarming attacks of FLY and SCAB, and cleansing and purifying the Skin, thereby greatly improving the WOOL, both in QUANTITY and QUALITY, and highly contributing to the general health of the animal.

SOLE AGENTS FOR CANADA:

H. SUGDEN EVANS & CO.,
MONTREAL.**WASTING DISEASES,**
SUCH AS

Consumption, Bronchitis, Asthma, General Debility, Brain Exhaustion, Chronic Constipation, Chronic Diarrhoea, Dyspepsia, or

Loss of Nervous Power.
ARE POSITIVELY CURED BY
FELLOWS'

Compound Syrup of Hypophosphites.

As Phosphorus enters so largely into the animal economy it becomes *par excellence* the best vehicle with which to associate the other vitalizing ingredients of healthy Blood, Nerve, and Muscles. In Fellows' Syrup of Hypophosphites are combined all the substances found necessary to ensure robust health, and whereas it was invented with a view to supply every deficiency, it certainly has performed some wonderful cures. Send for a pamphlet.

BOTTLED BY ALL DRUGGISTS.

Price, \$1.50 per bottle, or six bottles for \$7.50.

PERRY DAVIS & SON & LAWRENCE,
General Agents,
MONTREAL.**THE ACCIDENT INSURANCE CO. of NORTH AMERICA**

IS THE

First and Only Accident Insurance Company in Canada confining itself to one business.President—SIR ALEXANDER T. GALT, K.C.M.G.
(Formerly Finance Minister of Canada.)Vice-President—JOHN RANKIN, Esq.,
(Rankin, Beattie & Co.)

General Manager:

EDWARD RAWLINGS.

Head Office:

260 ST. JAMES STREET, MONTREAL.

TORONTO.—GZOWSKI & BUCHAN, Agents.

Agents in most of the principal cities and towns in Canada.

Representatives wanted in all unrepresented districts.

PATENTS

Properly secured in CANADA, the UNITED STATES, and Foreign Countries, by

R. A. KELLOND,*Solicitor and Expert in Patent Cases,*

214 ST. JAMES STREET,

(Next door to the Weather Prophet),

MONTREAL.

Trade Marks Registered. Searches made. Licenses and Transfers drawn. All Patent Business conducted on reasonable terms. *Twelve Years' Experience.***ALL GOING TO MANITOBA**SHOULD PROVIDE THEMSELVES WITH
THE LAND PROSPECTOR'S**MANUAL AND FIELD BOOK**
[ILLUSTRATED].

By CAPT. C. W. ALLEN, of Winnipeg.

The only publication which explains to intending settlers or speculators, with the aid of numerous original diagrams, how to locate any particular section of land in the surveyed districts of the Great North-West, and furnishes such other practical information as land-hunters require for an expedition in the prairie region.

"A very clear exposition of our system of survey, and of the Dominion Land Laws and Regulations."
—Lindsay Russell, Surveyor-General of Canada.

Copyright 1882 by HENRY G. VENNOR, before the Minister of Agriculture, Ottawa.

Price,	-	-	-	\$1.00 a year,
"	-	-	-	30 cents a quarter.
"	-	-	-	10 cents a copy.

Printed and published only at Montreal, Canada. Mailed to all parts of America, Post free.