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VENNOR'S

WEATHER BULLETIN

FOR CANADA AND THE UNITED STATES.

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

Vol. I.—No. 7. MONTREAL, AUGUST, 1882. SINGLE COPIES, 5 CENTS.

5th Month. AUGUST. 31 Days.

[As the Almanac rather tends to a misunderstanding than otherwise, and as reader will try to attach our predictions to certain dates, we do away with the calendar entirely and substitute an other form, in which, however, the probable periods of disturbances will be clearly defined for the respective sections of country.]

FIRST WEEK (1st to 14th.)

The month enters on a Tuesday, which, being a favorable day of the week, will probably give generally warm and pleasant weather. After this we would place the following conditions as the probable order:—

Pleasant weather with cool evenings and nights, waxing to warm and sultry weather with storms and showers towards the close of week (1st seven days.)

SECOND WEEK (7th to 14th.)

Weather varying from moderately warm to very warm, evenings and nights pleasantly cool. Showery and sultry with some heavy rains about the 12th and 13th.



"MONTREAL IN ICY FETTERS."

THIRD WEEK (14th to 21st.)

Cooler weather generally first portion of week, with cool to cold evenings and nights. Hail, rain and wind storms on or about the 17th and 18th. Nights frosty. Severe storms in Virginia through tobacco belt about middle of month or shortly after. Frosts through New York State this week, terminating in sultry weather again.

FOURTH WEEK 21st to 28th.

Heat again, and sultriness with scattered local storms, terminating in cooler weather towards and after the 25th. Storms on "Lakes" in Ontario, Canada, 25th or 26th. Storms of wind and thunder at New York and along North Atlantic coast between 25th and 28th, followed by wet weather.

CLOSE OF MONTH (28th to 31st.)

Generally cloudy and cooler weather with rain in western and eastern sections of country. Nights cool to cold and frosty well to the southward.

NOTE—On the whole a month likely to resemble that of the year 1880.

(See other predictions.)

Brief Predictions.

A fair month on the whole in the Province of Quebec, Canada.

Stormy and more than usually wet in the Province of Ontario and Lake District.

Very stormy on "Lakes" towards 28th and 29th of month.

Stormy on North Atlantic Coast and Middle States sea-board latter portion of month.

A succession of heavy rains in Ohio, Iowa and Missouri after middle of month, with cool weather.

In Virginia and through tobacco belt a con-

siderable portion of this month will be unfavorable, particularly between the 15th and the 20th.

A remarkably cold wave is likely to be generally experienced shortly after the middle of the month, with singularly cold evenings and nights well to the south-westward.

Early "frost nips" through Manitoba, and possibly an "August snow-fall."

Manners must adorn knowledge, and smooth its way through the world. Like a great rough diamond, it may do very well in a closet by way of a curiosity, and also for its intrinsic value.—Chesterfield.

Special Notices.

We have just 150 complete back number sets of BULLETIN up to June (inclusive) and these we wish to dispose of to some of our late subscribers, who may desire to have the year entire. Price only 25 cents.

The Editor of the BULLETIN will be at Ferry Beach, Maine, during August and September where correspondents are requested to direct their letters from present date.

Startling Theory.

WESTERN CYCLONES FOLLOWING THE TRACK OF
EXTINCT VOLCANOS.

In his recent published book, the great British geologist, Professor Geikil, makes some very suggestive and uncomfortable statements respecting the stability of the surface of the earth in the Western and Southern States. As is well known, this eminent scientist has made elaborate researches of the geologic features of this continent, and his conclusions almost warrant the supposition that the cyclones, tornadoes, and other atmospheric disturbances which have lately sacrificed life and property in the western section of the United States, are but the precursors of incalculably worse evils. Professor Geikil's investigations in Europe and America have led him to conclude that, besides the familiar forms of eruptive energy displayed by the three hundred and twenty-five active volcanos of the present day, there occur, from time to time, periods of tremendous volcanic activity, when the molten lava, instead of issuing from a mere insignificant vent, like Vesuvius or Stromboli, wells out over expanses of thousands of square miles together, by stupendous fissures and chasms opened for it in long lines through the solid crust of the globe. To such fiery inundations he refers not only the enormous volcanic plains of the Far West:—

GREAT SEAS OF MOLTEN MATERIAL.

which have covered entire regions with a level floor of igneous rock— but also the well-known basaltic plateaux of Ireland and Scotland, which he regards as due to the cooling of similar lava floods poured forth from the thousands of dykes opened by the volcanic energy of the tertiary period. In other words, our existing little volcanic craters may be regarded as mere moribund vents, indicative of a temporary epoch of waning activity which might at any time resume its terrific tidal energy. In this connection it is singular that this enormous field of ancient lava should be the favorite hunting ground in this country of the dread tornado and the devastating cyclone. The coincidence is evidently more than accidental, and points to a relation like that existing between cause and effect. The grounds for this conclusion may be thus summarized: Eminent scientists, including Sir William Thompson, Sir George Airy, Professor De Beaumont and others, maintain that "the earth's crust is thinner in volcanic regions than elsewhere," and that the probabilities are that "the inner surface of this crust is furrowed and fissured." Now, by far the greater weight of authority in the division of scientists is on the side of those who hold that our globe contains a liquid nucleus; while its crust is "formed of more or less compact rocks that float on a mass of fluid or semi fluid lava." The heaviest of the rocks form the ocean beds; lighter ones the continent; while the mountains are composed of the portions that project the farthest into the lava, in exactly the same way that large ships draw more water than small ones. The planet we inhabit may be illustrated by a glass globe filled with water. Being endowed with absolute fluidity, it is demonstrable that, by giving the globe a brisk rotary movement on a vertical axis, it will turn without carrying the liquid around with it. Light substances or specks suspended in the water will appear to remain still,

DESPITE THE BALL'S ROTATION,

But will this always be the case, whatever the speed of rotation? It has been demonstrated by the eminent French savant, M. Champagnour, in a series of experiments in the laboratory of the Sorbonne, that "if the rotation be sufficiently slow the liquid will be carried around with the glass globe, the whole revolving as one piece or solid ball." The

diurnal revolution of our globe, however, cannot be said to be slow. Its equatorial and bulging circumference being about twenty-five thousand miles, it follows that any given point on its surface at the equator is whirled around at the rate of over a thousand miles an hour, or sixteen miles a minute. The liquid nucleus cannot, therefore, accompany the solid

CRUST AS A SOLID BALL,

and at the point of meeting of the solid and fluid surfaces there must be considerable friction which will most probably develop that electricity which seems to be inherent in our planet; and this electricity, manifesting itself more powerfully and conspicuously at those thinner portions of its crust—in volcanic regions like the Western States—may originate these dreadful cyclones and tornadoes which have lately become such a source of terror to the inhabitants, more especially as they are almost uniformly accompanied by electrical manifestations. The momentous question, however arises. "Are these devastating wind-storms only the warnings and the precursors of a more terrible cataclysm which is to follow from below?" *Sunday Mercury.*

A Popular View of the Subject of Electricity.

The present electrical era, which really begun with the introduction of dynamo machines as a source of electrical power in place of the costly and feeble zinc cells, seems destined to last until the winds and tides shall furnish the power so cheaply that it will drive machinery, plough the fields, haul wood and draw water, and so will really do man's hard work for him. The future value of electricity is rated so high by clear-headed men of science that even so good a servant as steam has been to man sinks, by comparison into insignificance. An article in Blackwood's Magazine, sets the matter before the unscientific reader in so interesting a shape that the following passages are worth quoting.

"Electricity has long been a subject which had little interest except for the lovers of scientific research. A generation has not yet altogether passed away in which all industrial use of electricity was unknown; and the only practical application of knowledge in regard to it was not only to apply it usefully, but only to check its powers of destruction. Fifty years ago lightning conductors were the only electric works in common use; and the proper construction of these themselves was so little understood that to this day such appliances are constantly made and put up in the worst possible way for effecting their purpose. Now all this is changed. The thick network of wires that disfigures all our great cities is a daily demonstration to all of electricity being put to most important practical uses, and our means of communication are such as the most imaginative fairy tale that ever was written could not excel for wonders. But wonderful as has been the development of the telegraph, it appears likely that ere long we shall look upon it as but one, and by no means the most marvelous, of countless applications of electricity. We seem to have discovered a giant whose powers are illimitable, yet whose strength can be applied to do the delicate and subtle work—who is always ready for duty, and whose energies can be drawn out in a thousand ways—whose strength can be generated at one place, and carried to another for use, without serious loss—who can accumulate his vigor, so that, if it is not employed for a time, he can then do the work much harder than he could do continuously, who will begin working, and stop working at a touch—who will bore our hardest rocks, and carry our gentlest whisper to a friend miles away—who will be always docile, noiseless, untiring, never capricious, and ever on the alert.

"If what has already been accomplished in this now rapidly-expanding region of practical science is wonderful the future prospect is still more so. A few years may bring about a state of things in which men will be astonished that they could have thought the appliances of 1860 practical and convenient, and the wonders of steam engine be to us as the loom of old days was to those in whose generation the Jacquard was introduced. That the development will be rapid and the more useful, in proportion to the general interest taken in it by the public, is sure, and it is hoped that what has been said may tend to promote such a feeling of interest in a subject which is daily proving itself to possess substantial benefits for all."—*N. G. Telegraph.*

Mr. Augustus Watson's Notion.

New notions are yet the order of the day in regard to the weather, as well, as all other things. The *Cincinnati Commercial*, thus alludes to the latest of these. "To make assurance doubly sure, and to lay the Signal Service completely in the shade, Mr. AUGUSTUS WATSON comes forward with an invention all his own of storm and flood signals, by means of the telegraph and the cannon; not the toy cannon with which Young America amused itself yesterday, but the real, though now useless engines of destruction, lying around loose and useless in the various National arsenals, and which, if properly employed, he confidently claims, would save more than \$100,000,000 annually in damaged hay, grain and other crops, with many more millions of other property as well as thousands of lives, and all at the trifling cost of more or less gunpowder. It is a stupendous scheme, worthy of the brain of another king of cranks. Our inventor claims that his plan is authorized by law, but the Signal Service refuses to test it. The idea seems to be to have good-sized cannon stationed in cities, county-seats and principal towns, in charge of court-house officials, newspaper editors, fire companies or military stations, if there be any. Assuming that the storm has formed and started on its travels, the first cannon or lines of cannon reached by its advancing edge, are to be fired off in a certain minutely described order. Each gun in the line of the storm would now be in turn discharged, and every farmer hearing the sound would receive instant and certain warning to stop cutting and quickly get his hay or grain already cut under cover, or into cocks or shocks, all of which he would, of course, promptly do. It would not be necessary to point the cannon skywards like the Trachian soldiers, who sped their arrows into the clouds to frighten and drive away the storm. Church bells, also, should be rung and steam whistles, blown to increase the general noise, not, of course, as in olden times, when in France and Germany, as well as in England, bells were rung in order to protect the inhabitants from the evil spirits raging in the storm, but simply to warn the people of the coming rain and give them a chance to get in out of the wet. It is a wonderful invention. There would be a perpetual Forth of July and the amount of gunpowder wasted would exceed that already being wasted by the Government in shooting the sun up and down, for which senseless purpose no less than \$18,250 is expended annually for gunpowder alone. It is extremely doubtful, however, whether gunpowder would be superior to the Signal Service."

Our very best friends have a tincture of jealousy even in their friendship, and when they hear us praised by others will ascribe it to sinister and interested motives if they can.—Col. C. Colton.

Rich gifts wax poor when givers prove unkind.—Shakespeare.

UNUSUAL FOR JUNE.

Fleet of Icebergs.

The steamship "Abyssinia," which arrived June 17th from Liverpool, was delayed four days longer than her average time for crossing on account of having encountered immenso ice floes. The steamer left Liverpool on the morning of the 3rd instant, and had been out about a week when the ice first made its appearance. It was in latitude 42 degrees 40 minutes, longitude 19 degrees 50 minutes, about one o'clock in the morning of Sunday last when the captain was called on deck. The morning was so dark and such a heavy fog prevailed that one could scarcely see a hundred yards before him. Having been informed that ice was likely to be found in that region Captain Bently exercised the greatest caution, and when the first iceberg loomed up in the darkness he gave orders at once to diminish the speed of the vessel. No sooner was the first iceberg espied than others put in an appearance, until presently the ocean seemed to swarm with them. Some of them are described as being over two hundred feet in height, sugar loaf in shape, and tapering up to a point. Several, it is declared, were over two hundred feet at the base, while all around them were floating particles of ice that gave them the appearance of small islands. As the steamer progressed the icebergs grew more numerous, until finally the captain could do no more than drift and proceed with the greatest caution. At times the "Abyssinia" passed within 400 yards of the largest ice floes. A southeast wind was blowing and the weather was warm and pleasant, making the trip most enjoyable but for the dense fog that seemed to follow them almost until this city was reached. From the discovery of the first iceberg until the vessel was entirely clear of ice Captain Bently says that fully a hundred miles were travelled. Had the weather been clear and no fog there would be no difficulties encountered. At times the fog was so dense that the lookout man could not be seen by those on the deck of the vessel, and the captain ordered that the temperature of water be taken every few minutes to discover the proximity of the ice. On Monday the temperature of the sea fell to forty degrees, when the engines were stopped for six hours, after which the steamer proceeded very slowly for the next three days. On Tuesday the vessel sailed through a whole fleet of icebergs, varying in size from fifty to one hundred feet in length. The captain said that in his seventeen years experience in those waters he never saw so much ice. The ice, encountered, he states, comes from the coast of Labrador, is carried by the currents through Davis' Strait into the Gulf Stream, where it finally dissolves in the warmer atmosphere.—*New York Herald*, June 18.

How Snow in June Affected a Parrot.

A long time ago a distinguished English poet made such a remark to a female friend as the following:

Believe you, aye, as soon
 Seek roses in December, ice in June,
 Constancy in the wind, or corn in chaff,
 As soon believe a woman as an epitaph.

This distinguished English poet was unfortunately never permitted the privilege of spending a Summer in Montana, else the above immortal lines never would have been written. "Ice in June" was to be had very freely. When the snow commenced to tumble with the recklessness of innocence, about half past two o'clock, the pet parrot of a cynical old bachelor who lives close by this office, went out and drowned itself in the gutter. The same parrot

had been patterning after the vituperative habits of his master, and had been in the habit of saying "d--n the weather" every day for the past three months. These brief and pungent observations, however, were utterly inadequate to express the pent up feelings of this exile from the clime of the sunny south, so he broke the ice and drowned himself in front of his master's store.—*Butte (Montana) Miner*.

Cause of the recent Electric Disturbances.

THIS THE YEAR FOR SUN SPOTS.

For weeks past there have been an unusual number of electric storms. From all parts of the country have come stories of ruin and desolation. Whole families have been swept away by the bursting of waterspouts. Distilleries have been burned up by lightning, and men have been burned to death while attending to their duties. Nothing has been seen like it for years. Never before has there been such a disturbances of the atmosphere. Cold days have followed hot days in bewildering succession. For the last two or three days the air has been full of electricity; and sudden and violent thunderstorms, accompanied by frightful flashes of lightning, have been of more than daily occurrence. Several times have the violent rain-storm of the morning been surpassed by the thunderstorm of the evening.

A writer for the *Commercial* found Prof. Thomas W. Tobin, Ph. D., at his laboratory last night and had a long and interesting talk with the Professor on this subject. It may be remembered that the Professor delivered a lecture last spring on astronomy in which he stated that we would have exactly such weather as we had.

"What is the cause of this unprecedented weather, Professor?" asked the reporter.

"You will doubtless remember that this is the year for sun-spots. Once in every eleven years a number of spots appear on the face of the sun. Nobody knows their cause or effect. All is enveloped in the deepest mystery. There are a number of works by the greatest scientists on this subject, but they have all ended by saying they knew nothing. We only know that once in every ten or eleven years there is a period of maximum intensity of these spots. Then is their effect most powerfully felt by us. We are in just such a period now, but its influence has been increased on account of certain unusual occurrences.

"What occurrences?"

"Well, the electric fluid with which the air is filled passes around the North pole and the South pole and is evenly and equally distributed. The air is like the sea, denser at the tropics, rarer and shallower at the poles. Now, the electricity seeks to go by the easiest route, and goes through the rare atmosphere at the poles in preference to the denser air at the tropics. This is shown by the aurora borealis, which in the tropical and temperate regions becomes storms of lightning. The difference is only the difference of the density of the medium through which the electricity goes. There are never lightning storms in the Arctic circle, and there are never aurora borealis in the tropics.

"The air becomes filled with this mysterious, and powerful agent. Storms of unusual violence spread desolation on sea and land. We are in just such a condition of the atmosphere at present time. Barriers of impenetrable ice have blockaded the northern passage of the electricity. It is passing across the temperate and torrid zones. The introduction of it into the atmosphere has caused all the disturbance, and is likely to cause much more."

"What are your predictions for summer?"

"That is a very delicate point, and I would not like to say anything about it. There are so many questions that enter into it and so many things which might disturb the calculation, that I would not like to make any prediction. However, I think that the present summer will be a remarkable one in many respects. There will be extraordinary magnetic disturbances. If the Northern hemisphere should clear out and the electricity should flow around, the summer would be one of extraordinary heat. There would be long spells of heat for weeks together, during which the air would be undisturbed by storms. They may be greater than anything we have had for many years. This is one possibility. The other is that if this impediment in the North be not cleared out, there will be an unprecedented number of storms. Lightning in all its forms will fill the air, and cyclones will spread desolation on all sides. Either of these conditions may occur. We may have a summer that will roast us, or we may have one full of cyclones with all their attendant horrors. Another singular fact is that the ocean currents have been unusually late this year. This is due doubtless, to the obstructions in the North."

Mr. Tom Royal, the stationer, who lived for many years in Australia, says the papers there report unprecedented disturbances in the air. He was, eleven years ago, the period of the last sun spots, at Sydney, New South Wales, and says the heat was then for weeks 12° in shade. All in all, the summer promises to be one which all may look forward to with fear and trembling. We may be roasted by the heat or burned by the lightning.—*Louisville Commercial*.

"Pretty Warm Weather."

DISCUSSION IN A STREET CAR.

The *Burlington Hawkeye* is bound that the weather subject shall not be a dry one,—and we do not see why it need be. If people will talk about weather they should be prepared to support their statements. From the paper above mentioned we take the following:—

"Pretty warm," the man with the thin clothes said to the man in the seat, as the South Hill car was coming down the Division street steps.

"What's pretty warm?" growled the man in the corner.

"Why, the weather."

"What weather?" more gruffly than ever.

"Why," the man in the thin clothes said, looking as though he wished he hadn't begin it, "this weather."

"Well," said the man in the corner, "how's this weather different from any other?"

"The man with the thin clothes looked nervously at the dumb mule, and said, "It was warmer."

"How do you know it is?" asked the man in the corner.

The other man began to wish he was well out of it, and said he supposed it was; he hadn't heard how the—

"Isn't the weather the same everywhere?"

savagely demanded the man in the corner.

"Why, no," the man with the thin clothes replied, wishing to goodness he had a newspaper to hide behind, "no; it's warmer some places and some places it's colder."

"What makes it warmer in some places than it's colder in others?" remorselessly pursued the man in the corner.

"Why," the man with thin clothes said piteously, "the sun, the effects of the sun's heat."

"Makes it colder in some places than it's warmer in others?" roared the man in the corner indignantly. "Never heard of such a thing."

"No," the man with thin clothes hastened to explain. "I didn't mean that. The sun makes it warmer."

"Then what makes it colder?" pursued the remorseless man in the corner.

The man in thin clothes wiped the beaded perspiration from his pallid brow, and said slowly he guessed "it was the ice."

"What ice?" demanded the inquisitor.

"Why," the victim said, with every symptom of approaching dissolution apparent in his tremulous voice, "the ice that was—frozen—frozen—by the frost."

"Did you ever see any ice that wasn't frozen?" howled the man in the corner, in a fine burst of derision.

The man in thin clothes whispered that he wished he was dead, and said, "No: that is, he believed he didn't."

"Then," thundered the man in the corner, "what are you talking about?"

The man in thin clothes then made an effort to brace up, and spicily replied that he was trying to "talk about weather?"

And what do you know about it!" triumphant-ly roared the man in the corner.

"The man in thin clothes lost his grip again, and feebly said that "he didn't know very much about it, that was a fact." And then he tried to be cheerful and work in a little joke about nobody being able to know much about the weather, but the man in the corner sat down on him with a tremendous outburst.

"No, sir! I should say you didn't. You come into this car and force yourself on the attention of a stranger, and begin to talk to me about the weather, just as though you owned it, and I find you don't know a solitary thing about the matter yourself selected for your topic of conversation: you don't know one thing about meteorological conditions, principles or phenomena. you can't tell me why it is warm in August and cold in December; you don't know icicles form faster in the sunlight than they do in the shade; you don't know why the earth grows colder as it comes nearer the sun: you can't tell why a man can be sunstruck in the shade; you can't tell me how a cyclone is formed nor how the trade winds blow; you couldn't find the calm centre of a storm if your life depended on it; you don't know what a sirocco is nor where the southwest monsoon blows; you don't know the average rainfall in the United States for the past and current year; you don't understand the formation of fog, and you can't explain why the dew falls at night and dries up in the day; you don't know why the wind dries the ground more quickly than a hot sun; you don't know one solitary thing about the weather, and you are just like a thousand and one people who always begin talking about weather because they don't know less about weather than they do about anything else in the world."

And the man in the corner glared up and down at the timid passengers in the South Hill car, but no man durst answer him. And as for the man in the thin clothes, he didn't know for the life of him whether he had a sun-stroke or an ague chill. He only knew that it seemed about twenty-seven miles to the Jefferson street crossing.—*Burlington Hawkeye.*

"Down with the Weather Bureau!" will be the political war-cry some of these days, if things keep on as they have been going of late years. Ever since "Old Probabilities" was set up in business the weather has been getting worse and worse, and not only that, but there has been a good deal more of it. The time was when such a thing as a cyclone had never been heard of out west, but since the Signal Service sharps have got to meddling with the weather clerk's business all sorts of newfangled things have been introduced. Winters used to be cold and summers hot, but now you cannot depend upon their being anything—except something entirely different from what you have a right to expect. "The dollar of our daddies" has had its day; let the war-cry now be, "The weather of our great-grandfathers!"

Are the Planets Inhabited?

A curious discovery, made by Signor Schiaparelli, Director of the Royal Observatory at Milan, seems to start again that old and unanswerable question, "are the planets inhabited?" This Italian astronomer is one of the most assiduous watchers of the planet Mars. It was he who in 1877-78, first detected the many dusky bands which traverse and subdivide the ruddy portions of the Martial orb. Again in 1879-80, when the position of the planet was favourable he re-identified these strange lines; but during last January and February he has been able to observe and map out in more than twenty instances duplications of the dark streaks "covering the Equatorial region of Mars with a mysterious net work, to which there is nothing remotely analogous on the earth." The Italian astronomer has styled them "canals," for they bear the appearance of long sea-ways, dug through the Martial continents, as if a mania for short cuts had seized the inhabitants of the planet, and everybody residing there had become an active M. deLesseps. We have written "everybody residing there," but that is precisely the puzzling question which man always asks of science, and which science cannot answer. Dwellers upon this earth are tormented with such a curiosity as must have possessed the primitive tribes of some Pacific island, when they looked across the blue deep and wondered if the specks of land which they saw on all sides held men and women like themselves. The day came when a drifting raft of palm-logs or a dead body, brought them the knowledge they desired; but short of Sir William Thomson's life-bearing meteorite, what is to enlighten us? Still the microscope reveals a universe of existence beneath the range of the unaided eye. Myriads of perfect organisms swarm in every corner and crevice of nature; a rose-leaf is a menagerie of odd creatures; a drop of water a museum of aquatic monsters; parasites are peopled with parasites, and the very floating motes of the sun-beam carry millions of fruitful germs. Beneath us life is omnipresent—why should it not be so around, above, and beyond us? From the exquisitely-organised life of their own planet, and the perfect fitness of all its conditions, the earliest races of mankind believed, naturally enough, that this little earth was the centre of Creation, and the stars mere lamps hung up to beautify and illuminate its canopy. It is but as yesterday since this Ptolemaean theory died out; yet when Copernicus and his successors had proved that our earth is a poor little minor planet, circling round a very inferior sort of sun—and when it was learned that so vast is the scale of things that the light of the nearest stars-sun takes four years to reach mortal eyes, the question "Are there other inhabited worlds than ours" was put with greater insistence. The doctrine of economy seemed to render it so improbable that this insignificant spot alone should be the theatre of life and progress, and that all those splendid and mighty bodies circling round or shining afar should roll sterile of being. Science cannot reply. It has done a good deal; it can analyse the elements of distant bodies with the spectroscope, it can tell us which stars are approaching and which receding, it has mapped the moon and the nearest members of our system, and learned much about solar physics. But it cannot get free of human notions; it thinks and talks of life only as we know it here, and having calculated that even an uninflamable man would be flattened by his own weight on the sun, and that on Jupiter a ballet-girl could not dance a single step because of gravitation—to say nothing about difficulties of air and matter—it shakes its head over the business. Whewell thought that creatures might live in Venus "if they were of a pin's head size and had bodies of flint." The Neptunians, "with eyes like ours," could not so much as discern a single

one of the planets. In Jupiter, if there be Jovians, they must, like their habitation, be sloppy, feeble beings, made of "cinders and water." Thus great astronomers have mandered, forgetting that Nature equates her powers to her conditions, and that the lungs and heart and brains of terrestrials are as much the physical outcome of this globe as bodies of hydrogen might be of the solar corona, or eyes of ether and electrical breath of a starry habitant in Sirius or Aldebaran.

Discontented with the narrowness of science in this regard, certain bold spirits have actually discussed the possibility of solving the problem. The bodies to which they directed their attention were Mars and the Moon. All others are too hopelessly afar for even the wildest scheme of telegraphy, and Mars himself never comes nigher the Earth than forty millions of miles. The moon, however, swims in the sky only two hundred and forty thousand miles away—a perfectly dead and effete orb, the savants say, with no water, no air, and no likelihood of life, though a Chicago newspaper did once give an account of Lunar people seen about the "Sea of Serenity." If there be nobody of any kind in the Moon, these audacious theorists said, "well and good! but if she be peopled, somebody there must know something of geometry, which is a common basis of science." They proposed, therefore, to build upon Salisbury Plain, in mile-long lines of furze, or other heaped up fuel, the diagram of the forty-seventh proposition of "Euclid," and on a clear night to set fire to it simultaneously. A geometer in the Moon, they thought, would see and recognise the "doctrine of the hypotenuse" in fiery outline, since we ourselves can, with good glasses, discern an object as large as St. Paul's Cathedral on the lunar surface. These theorists hoped, therefore, that the mathematical signal might haply be beheld by an intelligent lunarian and answered in the same fashion with some familiar symbol or figure—after which, they argued, communication of some sort could soon be established. The wild experiment has not been tried, and perhaps at best geometrical study has never been much cultivated in that pale orb where water would boil at freezing point, and where the air, if it exists, is two hundred times rarer than our own, not to speak of the scientific belief that the moon burned herself out into ashes a thousand million years ago. Let us then turn to Mars, wherein Signor Schiaparelli has just discovered this network of tranches or "canals," which look as if enormous public works were being prosecuted. That planet, though so distant, is full of strongly marked features under the telescope. Five thousand miles in diameter, and therefore not so large as our earth, it is yet a respectable globe, which might, indeed, have giants for inhabitants, since its gravity is so small. Its year is nearly twice as long as ours; its summer probably cool and its winter warm, while even at forty million miles of distance we can note the red and green patches of color on the planet, which have been accurately mapped, and the white spots at each pole, which are considered to be Arctic and Antarctic icecaps. This red hue of Mars has puzzled everybody save the French savants, who make capital of anything. A Parisian astronomer put forward the theory that vegetation in this planet is crimson instead of green, and that is why we see Mars ruddy in his summer season and dull in his winter time. It would be interesting to know what magnificent planetary flower it is which, thus suddenly blossoming over thousands of square miles, sends the rosy glow so far into space. But Mars, if he has not these sublime "gardens of Gul in their bloom," possesses almost certainly atmosphere, waters and snow, with oceans, rivers, clouds, rain, and fogs, as well, apparently trade winds and oceanic currents. There is evidently going forward in that orb astrono-

mers say, the secular changes which our own globe experiences, the slow formation of valleys and deltas, the succession of equable seasons, with other conditions of intelligible life. In all parts of the surface except "the snowy poles of moonless Mars" this particular sphere exhibits features and details which encourage the idea of a peopled world. Mars is more comfortably placid, according to mortal notions, for becoming tenanted than great bodies like Uranus, where for twenty years together the small and feeble sun would not be visible to people in a certain latitude, or than Jupiter, which Whewell held was a "world of fog with a cinder or two for a centre." Mars, therefore, is precisely the place whence we might expect interesting speculations to arise on this absorbing topic of life beyond the earth.

It is not, however, in Signor Schirparelli's discoveries that any ingenuous mind must look for proofs of planetary existence. These "canals," so numerous and curious, must be of prodigious size to be visible at all; probably as wide as the Mediterranean at the very least, and much beyond the range of any mechanical power which even Martians could exercise. If they be found permanent the phenomenon would indeed prove very puzzling, but they will more probably turn out to resemble the belts of Jupiter, which, though varying from time to time, are never absent from the face of that great planet. These, also, take the form of parallel stripes or ribbons of different color, and are formed and closed up in a single hour, though thousands of miles wide, showing probably a prodigious activity of internal motion and force in the orb itself, since the sun at that distance could not so influence Jupiter. It is always doubtful whether we see the real surface of any telescopic body except our own Moon, and these lines upon Mars, like his red color and his white poles, may be but the irradiated tints of an enveloping medium. The interest, however, of the discovery remains, nor need it affect one way or the other the all-absorbing question of the possible extension of animated and intelligent existence beyond our narrow experiences. Neither Science nor Religion takes, perhaps sufficient account of this immense and sublime conception. Science in doubting the spread of life throughout the whole universe, because of this or that physical difficulty, has not considered how impossible it would have seemed to construct out of the sixty or seventy lifeless terrestrial elements, under our atmospherical and physical conditions, the men, and animals, and vegetation of the earth. Religion in failing to employ the beautiful and hopeful conception of a hierarchy of existence, rising by natural grades from sphere to sphere, has cramped her powers of moral and spiritual encouragement, and spoken far too long the limited language of Ptolemaean theologies. For anything that man knows, imprisoned as he is in this small orb, with earthly senses and a narrow mind overcome with inherited dread, space itself may be capable of forms and modes of existence, as our own ocean is, and our air; and to imagine the planetary and stellar bodies the only centres of life may be as gross a mistake as though a limpet supposed that nothing lived which had not a shell, and a rock to stick upon.—*The London Daily Telegraph.*

Odds and Ends.

"Oh! has you got your coal in,
Am you ready fur de cold?
Got de cellar full o' taters
To brave the winter bold?
Kase it's gwyne to freeze,
An' gwyne fur to snow,
An' you'll git de chilblains
De fust thing you know."
—Givedam Jones.

Entry of July.

WRATH OF THE ELEMENTS.

A Fearful Storm Sweeps over Ohio and Indiana—Cyclone in Pennsylvania.

CINCINNATI, July 1.—A storm of wind and rain passed over southern Ohio yesterday afternoon from the northeast. Very meagre reports as to its extent have been received, but from the prostration of telegraph wires in all directions, north and northwest, it is evident that the wind was fierce. It was not felt at Indianapolis, but was severe at Cleveland, and did not reach far east of Pittsburg. At Wilmington, O., the wind was terrific, but the damage was mostly to crops. The wheat was blown flat, but with fair weather may be saved. The corn and oats were the most injured, the former being blown down, and the heavy rain apparently breaking it off. Alexander Jenkins was killed by lightning while shocking wheat.

At Peru, Ind., the wind and rain were unusually severe. Wheat was blown down and is supposed to be greatly injured. Here the wind was the severest of the Summer. Shade trees were broken down and one or two houses unroofed. At a point northwest of the city the wind was so strong as to blow pedestrians from their feet.

LAFAYETTE, Ind., July 1.—Such a rain as fell here yesterday was never equalled in the recollection of the oldest inhabitants. The streets were flooded at nine o'clock last night, filling the cellars level with the sidewalks, and washing away street crossings and fences, and doing damage to the extent of many thousands of dollars. The upper part of the city for over a mile resembles Venice on a small scale. The culvert under the South Street Railroad yards, containing several tracks, was washed out. Two men narrowly escaped being buried. Only one track can be used for a quarter of a mile. The damage is not yet fully known, but it will prove to be very heavy.

OREGON, Ill., July 1.—A storm of unequalled severity prevailed yesterday. The water rose on the flats, driving dozens of families from their homes. Fifteen buildings were struck by lightning, and a Mr. Spooner was killed. Many barns and outbuildings were carried away by the wind and the flood. A score of bridges floated off. Hundreds of acres of grain were entirely ruined, and horses and cattle were killed by lightning in nearly every pasture. Damage to the amount of \$50,000 was done in this city and vicinity. Miles of the track of the Chicago and Iowa road are impassable.

CEDAR RAPIDS, Ia., July 1.—There was a furious storm in Central Iowa on Thursday night, but though a regular tornado it was for the greater part of its course in the air, not striking the ground except in a few places, where it demolished everything.

GREENVILLE, July 1.—A cyclone struck Coalville, Butler County, Pa., last night at seven o'clock, blowing half the houses down and nearly all of the stores. Two persons were killed and twenty-five injured.

The track of the storm was only about one quarter of a mile wide and ten miles long, but in that territory great damage was done. In the country adjoining the village many houses were blown down. The principal portion of the ruin wrought was in Coalville. A new frame store building and dwelling, owned by Frank Bard, was completely wrecked in an instant. Mr. Bard, his sister-in-law and his clerk, Mr. Cannon, were badly injured. Mrs. Bard was blown a considerable distance, but miraculously escaped any injury beyond a few bruises.

MANITOU, Col., July 2.—A waterspout last night done considerable damage to property here. Over a mile of railroad was washed away. Arthur Gillingham, a boy, was carried down with the flood and drowned.

An Iowa Storm.

(Related by an Eye-Witness.)

"The sun went down," he said, "behind a bank of peculiar clouds. They were of fantastic shapes, and the last rays of the setting sun imparted to them a crimson, angry hue. I couldn't help, for the life of me, thinking of the ferocious red eyes of an untamable bull dog, when I looked at the lurid spectacle. Night came on, and with it the storm. Incessant lightning illuminated the northern and western heavens. The clouds grew blacker and the atmospheric agitation increased. The balloon-shaped cloud about which you already know, could be seen approaching a quarter of an hour before it reached the town, and for at least five minutes before its arrival the roaring sound which has been aptly likened to the rumbling of fifty freight trains across an iron bridge filled the air with its ominous echoes. It was preceded with a violent wind, which blew down trees and drove people into the house. I was standing in an open space on one of the western streets of the town, and feeling that I was safer there than I could be in a house, I determined to stay there, though I admit I was frightened half to death. The rumbling roar came nearer, and the lowering mass seemed to reach out black arms to the earth, when with a horrible, whistling shriek, the monster swept by within a hundred yards of the spot where I was rooted with amazement and fear. The raging thing swooped down upon the place, licking up everything in its path. Some of the houses were mashed down and swept along, while others were picked up bodily, torn to pieces, and the furniture and occupants lifted into the air, either to be hurled to the earth again or blown the Lord knows where. The dreadful giant pursued its way, crushing, crunching, and destroying with cruel wantonness. In the unearthly glare produced by the blazing lightning which flashed wickedly and incessantly, and by the balls of fire with which the gyrating mass seemed alive, I could see the air filled with flying objects of every conceivable form, from scraps of paper to sections of roofs and floors, to the height of four hundred or five hundred feet, and I don't know how much higher. A house would be crushed like an egg shell, and in less time than it takes to tell the materials that composed it would be climbing skyward with incredible rapidity. The air was charged with electricity, and where I stood the atmosphere was of a ghostly pallor. The whirling monster threw out flashes and sparks and balls as it passed along. Mingled with the frightful roaring of the cyclone could be heard the shrill, blood-curdling shrieks of women as they were caught up and borne away to their death. The demon concert is ringing in my ears yet. The cyclone was probably a minute or a minute-and-a-half passing me. It seemed an age. Nothing ever filled me with such unspeakable awe as this relentless riot of the elements—the merciless march of death."

Path of a Cyclone.

The editor of the Des Moines Register makes an appeal to the people of the country for aid for sufferers by the June cyclone in Iowa. He makes the following statement: "The tornado made a swath of destruction through a thickly settled portion of Iowa, some one hundred and fifty miles in length and an average of a half mile in width. We have name now of sixty-nine dead and five hundred wounded. Half of the latter are grievously hurt, and probably a fifth of them fatally. Over three hundred families have had their homes totally destroyed, and there are now at least fifteen hundred homeless and in want. The loss in property will exceed two millions of dollars, and may reach three millions."

A Disastrous Cloud Burst.

BAKERSFIELD, Cal., July 2.—The Indian settlement in Tejou Canon was destroyed by a flood, caused by a cloud burst in the mountains. Several were drowned. Many were injured by drift timber. Farmers lower down the valley, it is supposed, have suffered heavy losses.

Overcome by Heat.

NEW YORK, July 2.—While the Twenty-third Regiment was marching to the steamer in Brooklyn, en route to Peekskill, twenty men were overcome by the heat. The decks were converted into a temporary hospital. None of the cases resulted fatally.

Kansas and Arkansas Visited— Wind Blowing 180 Miles an Hour.

OSAGE MISSION, Kan., July 5.—A tornado visited the country about nine miles east of this place Monday night, blowing down several houses and barns. The town of Beulah, in Crawford county, suffered badly, having a number of houses blown down. Girard, in the same county, suffered considerably. No lives were lost as far as heard from.

RAIN IN TORRENTS.

LITTLE ROCK, July 5.—This city was visited Monday night by a veritable tornado. For half an hour the wind blew at the rate of seventy-two miles per hour, and for one minute it made three miles, or at the rate of 180 miles per hour. These figures are given by the signal-service station here. No buildings were blown down, but signs, chimneys and roofs were blown away, while trees and fences were prostrated in all directions. Rain fell in torrents.

The Iowa Tornado.

From an appeal to the public for aid for the sufferers by the recent great tornado in Iowa we make the following extracts: The tornado made a swath of destruction through the thickly settled portion of Iowa, some 150 miles in length and an average of half a mile in width, extending from a point south of Ames, in the centre of the State, and swept in the shape of a crescent to South English, in Zeokuk county, in the Southeastern part of the State. We have the names now of 69 dead and 500 wounded, half of the latter grievously hurt and probably a fifth of them fatally. Over three hundred families have had their homes totally destroyed, and there are now at least 1,500 homeless and in want. The loss in property will exceed \$2,000,000, and may reach 3,000,000. In the town of Grinnell alone over \$1,000,000 in property was destroyed, on none of which there was a cent of insurance, as in the case of fires. It will take at least \$300,000 to put the people there beyond need and distress. It will take \$100,000 at once to put the wounded people in condition to be cared for. It will take \$1,000,000 at the lowest to keep the sufferers from want and to help them to put the humbles. of roofs over their heads. The condition of other towns and farming communities is fully as pitiable and helpless. All that the people of Iowa can do will be done to alleviate the condition and repair in part the losses of the sufferers. But it will take \$1,000,000 to do it, even to half way comfort and recompense them; and the people of a State who have always borne their share and done their part in all national calamities may fitly ask the people of other communities to help them in this hour of great calamity to many of the worst of its people.

The fury and power of this utter calamity were as indescribable in their mightiness of strength as their havoc and power were cruel and complete. Many people were left of their

houses not a splinter as large as a finger, not a shred of furniture as large as a skein of silk, and hundreds have no clothing left except the night clothes they had on. Cases of exceptional horror add exceptional pathos to the piteous whole. Women in pregnancy were killed outright, others forced to a premature delivery, and little children had both parents killed, and were left maimed and wounded themselves. Every condition exists that most tenderly appeals to the pity of the human heart. The wounds inflicted by the debris that filled the air like chaos, by the electric balls of fire that seemed to traverse every inch of space and that exploded with fearfully fatal effect, will, many of them, defy all skill and nursing, even with the tenderest care.

The fury of the storm, which was clearly of electric origin, and which, indeed, may be described as having been electricity itself, precipitated in chaos, may be understood from the statement that, in various places, it took up in its greater spirals, or funnels, houses a thousand feet high, and took up and carried large herds of cattle through the air for thousands of feet and dashed them down dead in heaps. Many thousands of cattle, horses, hogs, and other animals now lie in the track of the tornado, already rotting, and adding, in the hot weather, the horror of putrefaction to the foul and pervading odors that are being given off by the millions of tons of decaying matter left in the wake of the tornado. The horrors of the storm, the unspenkable cruelties that it inflicted, the pitiless woe of its coming in the night, when the dead were not known and the wounded could not be found, and the piteous state in which it has left hundreds of families, before prosperous, may not be described in words, but once known to generous hearts must command the instant sympathy of the liberal and immediate help.

Remittances may be made to Hon. J. B. Grinnell, at Grinnell, or the Mayor of Grinnell.—J. S. CLARKSON, Editor Des Moines Register.

Renovate Lawns.

However well the lawn may be cared for during the season of growth, it will often show signs of deterioration through the gradual exhaustion of the soil. A thick, matted sod over the soil is not favorable to a free circulation of air, freighted with ammonia, through it, and it becomes gradually deprived of that very important pabulum of grass. To restore the wasted ammonia as well as phosphates and potash with the least disturbance of the turf and annoyance to the family, is the question now under discussion.

One way would be to cover the ground with rich stable manure. But this course is very objectionable. To cover the soil with a thick coat of fine barn yard manure to lie through the winter and be raked off in the spring, is the method generally pursued, but it has its demerits. First it is very disgusting to the sight and smell of the family and passers-by all through the winter, especially if it be an open one. Secondly, it may deposit seeds of noxious weeds in the soil, rendering it more foul. If there is no better way of renovating the lawn than this, we must tolerate it, but we submit that there is.

A good commercial fertilizer, bone-meal, a rich, ammoniated phosphate, prepared with special reference to the wants of the lawn, would secure the desired fertilization with much less annoyance than stable manure. Have the fertilizer to cover the ground at the rate of five hundred pounds per acre.

We would say further in this connection, that it is almost impossible to preserve a uniform growth of lawn grass where trees and shrubs are growing. The shade of the tops and the

competition of the roots impoverish the soil, and the effects are visible on the lawn. On large grounds, shade trees are indispensable, but then a small patch of clean lawn can be preserved directly in front of the dwelling, and in small town lots the better way is, to devote the entire front exclusively to grass.—*American Rural Home.*

English Winters.

When frost and snow prevail at this time of year we hear a good deal about old-fashioned winters, reasonable Christmas weather, and so forth, the idea being generally prevalent that some 30 or 40 years ago our winters were much colder than they are now, and that, in particular, December was of yore a month of much frost and snow. Meteorological records give no support to these views, which appear to be based solely on imperfect recollection of bitter winters in the past, winters as exceptional then as such winters are now, but remembered as though they had occurred in successive years and for many years in succession. Forty years ago men spoke of old-fashioned winters much as many of us do now. The belief was just as prevalent as now that some 30 or forty years earlier the winters had been much more severe than at the then present time. It is true this does not of itself prove that no such change has occurred as many believe in, for the winters 80 years ago might have been as much bitterer than the winters 40 years ago as these are supposed to have been bitterer than our present winters. but we should have to believe in a much greater change during the last 80 years than is assumed to have happened in the last 40 years. So that, as we have records of the winter weather 80 years ago, it becomes easier to put the prevalent superstition about the bitterness of the past winters to the test. When this is done, we find nothing to suggest that the average winter weather 80 or 100 years ago was severer than that which we now experience.

Before considering some of the evidence relating to past winters, we may as well note that, so far as Christmas weather is concerned, there is a real foundation for the theory that there has been a change, though none whatever for the theory that winter weather has changed. The old-fashioned Christmas weather—not the Christmas weather 30 or 40 years, but a century and a half ago—was, in fact, the weather of a different part of the year. Christmas-day during the first half of last century, instead of occurring as now four or five days after the shortest day of winter solstice, fell more than a fortnight after that epoch. Now the coldest part of the year, on the average, falls about four weeks after the winter solstice; so that we can very well understand that on the average of many years old Christmas-day and the old Christmas season would be colder than our present Christmas-tide. A study of the meteorological records of the last half century shows very clearly that such a difference exists between the Christmas weather of the New Style and that of the Old Style with its seasonal error of ten days. Thus, compare the weather of last fortnight in December in which our present Christmas season falls with that of the first fortnight in January to which old Christmas tide belonged. We find in 50 years seven in which the weather of the last fortnight of December was of a neutral character, mild and cold weather alternating in about equal proportions; 27 in which the weather of that fortnight was mild, and in the remaining 16 only the weather was severe. On the contrary, while there were eight years of neutral weather during the first fortnight in January, there were 15 only in which the weather of that fortnight was mild, the weather being severe in 27. We can

understand, then, why December was depicted by the poets down to the time of the change of style as a colder month than we now find it. It belonged to a colder part of the year, just as Spenser's "Mery Moneth of May" belonged to a warmer part of the year than our present May.

Those who quote the accounts which have been handed down of bitter winters in past time have been apt to overlook the circumstance that those accounts nearly always tend to disprove, not to establish, the theory of change. Those records tell us of the exceeding severity of cold which prevailed at such and such a time, but they also tell us that the cold was altogether exceptional. Sometimes even we find that while the *maximum* degree of cold recorded has fallen short of what has been experienced within the last 20 or 30 years, it is described as exceeding aught that even the oldest persons could remember. Gilbert White speaks of the cold in December, 1764, as very extraordinary, but he mentions one degree below zero as the lowest temperature recorded out of doors in the shade. In January, 1855, a temperature of four degrees below zero was recorded in the neighbourhood of London. One circumstance, indeed, which White mentions, would seem to show that cold such as we had in January, 1855, was regarded as his day as too improbable to be worth considering in making thermometers, for he says that a thermometer by Martin, a well known maker of scientific instruments, was graduated only down to four degrees above zero, so that the mercury sank quite below the brass guard of the bulb. Again, in describing the severe weather of January, 1776, when the Thames was frozen over, both above and below the bridge, White tells us that during the four coldest nights the thermometer at South Lambeth fell to 11, seven, six, and six (above zero), and at Selborne sank on one night exactly to zero; but he adds that this was "a most unusual degree of cold for the south of England." It was the long continuance of the frost of 1776, not its intensity, which caused the effects to be so remarkable. The snow lay 26 days on the houses in the city, being all that time perfectly dry, so that the snow in the streets "crumbled and trode dusty, and, turning gray, resembled bay salt." The long continuance of the frost depends on the long continued northerly winds. At any time we might have a similar experience. We have been so far fortunate that for many years it has never chanced to blow continually from northerly quarters for three or four weeks in January, the coldest month in the year. And we may safely conclude, from long experience, that such a continuance of northerly winds at that season is improbable. But there is no reason why it should not happen now as in 1776 and other past years. It was as little anticipated in the first week of 1776 as in the first week of 1870. Their experience was as ours has been. "The oldest housekeepers living," White tells us, "did not remember" a frost which had lasted (continuously) so long as that of January, 1776.

Forty or fifty years ago those who believed that a great change had in the course of a generation or so affected winter weather in Great Britain were at loss to explain the greater mildness of the season. In the United States and Canada, where a similar change was, quite erroneously, believed to have occurred, a cause was imagined in the clearing of forests and the consequent exposure of large tracts of land to the sun's rays. But in Great Britain and in Europe generally there had been no clearing away of millions of acres of timber. So that a writer in 1837 admitted, "if the Climate of Great Britain has actually undergone a change, the cause, whatever it may be, must be of a different nature from

that generally supposed to affect the climate of North America." The imagined change in the last 40 years has been attributed to a cause, which, perhaps, has some real effect on the climate relations, though certainly no such effect as has been attributed to it—the enormous annual consumption of coal. It is possible that in manufacturing towns and in the larger cities, the mean temperature of the winter months may be slightly increased in this way; though there is no valid evidence to show that this is the case, and any increase must be very small. That the climate of the country should be influenced by the consumption of coal is altogether incredible. Only a portion of the heat resulting from the use of coal in this country tends to warm the air, directly or indirectly. Most of it is or ought to be expended in generating various forms of force. But even if all the coals raised annually were used to increase the warmth of our air, the effect would be very slight by comparison with the heat received from the sun. The combustion of four times as many tons of coal as are annually raised in Great Britain would barely suffice to dry the island after one day's heavy rainfall, if we could imagine it used in that way.—*The London Times*.

CLOUD BANDS IN THE PLANET MARS.—On this subject Captain Jannin, F.R.G.S., writes: "In your article on the discoveries of Signor Schiaparelli in the planet Mars, it is stated that during last January and February, he has been able to observe and map out in more than twenty instances duplicates of the dark streak covering the equatorial region of Mars, with a mysterious network to which there is nothing remotely analogous on the earth," permit me to say that during the last twenty years I have repeatedly pointed out that our own cloud bands assumed this identical form. Take the following extract from "Winds and their Courses," page 90—an extract from my own log—of what I saw off the Cape of Good Hope, and is simply a description of what I have since observed in nearly every part of the globe: "There were two distinct series of belts of clouds. In no case did a belt perform a complete circuit. East of the centre their contact formed a dense mass of cumulus and nimbus, whilst westward from it the clouds were beautifully interwoven, forming a sort of net work." Now these crossings and network formations often cover spaces of from 600 to 1,000 square miles, and as the cloud bands are often exceedingly dense, with bright spaces between them, it follows that, if an observer could be placed in Mars or in the moon, with a good telescope looking down upon the earth, he would see the long dark lines and network precisely similar to those seen in Mars. I have repeatedly pointed out to friends this beautiful arrangement of what may be called our permanent cloud bands. I was under the impression that the earth enjoyed a monopoly of such arrangements; but this is evidently not so."—*London Daily Telegraph*, April 1882.

A Rainy Day.

A wind that shrieks to the window pane,
A wind in the chimney moaning,
A wind that tramples the ripened grain,
And sets the trees a-groaning!
A wind that is dizzy with whirling play,
A dozen of winds that have lost their way
In spite of the others calling,
A thump of Apples on the ground,
A flutter and flurry and whirling round
Of leaves too soon a dying;
A tossing and streaming like hair unbound
Of the willow boughs a-flying:
A lonely road and a gloomy lane,
An empty lake that is blistered with rain,
And a heavy sky that is falling.

Robert K. Weeks.

CALENDAR FOR THE FLOWER, FRUIT AND VEGETABLE GARDEN.

August.

Flower Garden.—But little deviation is required from the instructions for July.

Fruit Garden.—Strawberries that have fruited will now be making "runners" or young plants. These should be kept cut off close to the old plant, so that the full force of the root is expended in making the "crowns" or fruit-buds for next season's crop. If plants are required for new beds, only the required number should be allowed to grow, and these should be layered in pots, as recommended in July. The old stems of raspberries and blackberries that have borne fruit should be cut away, and the young shoots thinned to three or four canes to each hill or plant. If tied to stakes and topped when four or five feet high, they will form three or four branches on a cane, and will make stronger fruiting plants for next year.

Vegetable Garden.—Hoe deeply such crops as cabbage, cauliflower and celery. The earthing up of celery this month is not to be recommended. Onions in many sections can be harvested. The proper condition is when the tops are turning yellow and falling down. They are dried best by placing them in a dry shed in thin layers. Sow spinach for fall use, but not yet for the winter crop. Red top, white globe and yellow Aberdeen turnips should now be sown, rutabaga turnips sown last month will need thinning, and in extreme Southern States they may yet be sown.

Take precautions during August for a considerable amount of rain-fall and cool to cold and frosty nights, particularly between 15th and 20th and 25th to 28th of month.

Hail storms are likely to be of sudden and frequent occurrence and glass frames and glass houses should have matting prepared for speedy use.

Wind storms will probably be above the average.

In the tobacco sections of Virginia, stormy and cool weather is probable between the 15th and 20th and 27th and 28th of month.

The warmest portion of August is likely to occur between the 22nd and 25th days.

Mix a little carbonate of soda with the water in which flowers are immersed, and it will preserve them for a fortnight. Common saltpetre is also a very good preservative.

Take a new flower pot, wash it clean, wrap it in a wet cloth, and set it over butter; it will keep it as hard as if on ice. Milk if put into an earthen can, or even a tin one, will keep sweet for a long time if well wrapped in a wet cloth.

THE CUCUMBER BEETLE.—The larva or grub of this beetle (*Diabrotica vittata*) bores into the lower part of the stem just beneath the lower part at the surface of the ground, while the perfect insects or beetles attack all tender parts of the vine above the ground. Many remedies have been recommended for this insect, among which powdered plaster of Paris sprinkled over the vines is a favorite with some. This sometimes keeps the beetle from the tops, but has no effect on the grubs at the roots. If the hills are boxed with boxes open at the top, and this covered with gauze, the bug can not get to the vines. Persian insect powder or pyrethrum sprinkled over the vines when wet is perhaps the best remedy. If applied when the vines are young, before blossoming, and continued after every shower or every week, especially on the main vines and about the roots, no eggs will be laid, and, of course, no grubs will kill the vines.

The Weather Bulletin.

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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 text.

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Editorial.

The "F. G. S." at the end of the Editor's name means "*Fellow of the Geological Society, London Eng.*" not "Flinger of Great Storms" as the *Boston Herald* puts it.

It is estimated that not less than one hundred and thirty persons were killed by the June tornados in Kansas, Missouri, Iowa, Nebraska, Dakota and Minnesota, and that the total amount of property destroyed will exceed three and a half millions.

During the summer season we would thank correspondents who write on *Bulletin* business, to mark on the corner of envelope "*Vennor's Bulletin*" as such letters will be opened and attended to at once, while all letters not so marked will be forwarded or opened to Mr. Vennor's summer resort.

Our details of the weather for the quarters of months and the dates, arranged as these are for all sections of country, must be to a greater, or less extent experimental. We depend more upon the columns headed "Brief Predictions," and "The General Outlook." For instance, while in a portion of the United States July entered with heat, in another there were continuous rain falls, and in yet another section cyclones. Our first "long range" forecast in the January BULLETIN still holds good.

How foolish it is for people to expect the weather to be the same everywhere upon the same date. Again we have to remind them that they must read the weather for the weeks

as a whole. Thus if we give "cool and showery weather terminating in heat" they must remember our standing prediction of "a cool and wet summer with but brief periods of heat" from time to time, a date may be astray in the monthly arrangement of the weather, this does not detract from the first and leading forecast.

The Weather Outlook.

Is not improving. Instead of the "couplet" being composed of, or embracing two summers as we at first thought, it appears now that it is to consist of a summer and a winter. In other words it is probable that the "rain wave" in southwestern and southern sections, at any rate, will continue up to and through the fore part of March, 1883; while in extreme western and northern sections there is likely to be heavy snow-falls in November, December and the fore part of January.

September is likely to be the counter-balancing month of this most unpropitious season, and during this month everything should be done that can be, to house things safely against further wet and storm.

October looks full of disastrous storms of wind and rain, and a good deal of cold weather after the middle and in the last week of the month.

From October rains and floods are likely to continue in Kansas, Missouri, Iowa, Nebraska, Dakota and Minnesota, with an occasional heavy snow-fall, up to the entry of the year 1883.

In the Middle and Northern United States and Canada the weather is also likely to continue wet up to a late period, but two or more wintry belts of weather with snow-falls are likely to be experienced in the latter portion of October and in November, after which rain will again set in. At New York the autumn will be very wet. In the North West early cold and advanced snow falls are likely to be the conditions, while in December the cold may be intense.

We will review again in the September issue. So far our statements tally with our early impressions.

Never Give Up.

Vennor seems to be the only weather prophet who attends strictly to business. The others make occasional "spurts," scoring a success now and then, but oftener recording a failure. But Vennor keeps it up all the time, and prints his forecasts one week and revises them next, just as if the weather would stop if he did.—*Quebec Chronicle*.

JUST EXACTLY SO. When we commenced this investigation, we meant it should be "business" and nothing but business. Nothing yet has ever been accomplished by "spurts." A spurdy man is "unstable in all his ways" and only makes a great ado about nothing. He, in fact, does not know himself what he is trying to do. We set our task and have continued steadily at it, in spite of all remarks, jeers, ridicule or otherwise; and while we have permitted "fools

to laugh at their own folly," have also given all the satisfaction in our power to earnest workers and enquirers. The weather subject is a different one, and calls for whole-souled, not half-hearted and spasmodic work. Yes. Let us take it for granted that the weather would stop if we did—that is just the idea. What a dire event should it do so. Weather stop!! Just think of it for a moment. What would become of two-thirds of the newspapers of the day? What would our street salutations be? Would New Years callers die prematurely?—or, would not the empty custom have to be abandoned? What would ladies do? But the thought is too utterly horrid, let us dismiss it for the nonce and forever. The weather *must, will go on, and so will we.*

Sitting on Weather Records Won't Hatch them.

There has been altogether too much of sitting upon weather records, without making use of them, for the rapid development of the science. As we write we know of an individual who, for more than two years, has with clock-work regularity recorded the readings of his instruments thrice daily and good instruments to; the best that money could purchase. At night and after the last entry the book is shut with a snap of relief; another day has been recorded faithfully and the book is placed on the shelf. By and by that book is filled. There has not been one omission of day or hour. It is all there—all there (but nowhere else as it ought to be). Another book is taken, and, in course of time is filled—then another and another, until a goodly array of neat and uniform volumes stand upon the library shelf. Talk to this man and tell him "It is about the hottest day we have had for some time,"—and his reply will be, probably "O, yes, pretty warm, but nothing unusual. I could show you score of years in my books in which the weather was very much warmer than at present—very much warmer. Why, do you know I have kept the temperature daily for upwards of twenty years." You look aghast. He passes on his way with a grunt of triumph, and on re-entering his study, glances proudly at his array of nicely bound volumes O so full of weather notes—so very full—All there—but nowhere else. Such a man is "sitting on his weather records,"—but they "don't hatch." They want turning—over and over; while the man himself, a poor slave to what he terms "systematic observation," really knows no more—probably less—about the weather, than the majority of his fellow-beings.

But these records are really valuable if rightly used. The tables or columns of temperature figure should be converted into temperature maps and all the periods of prominent disturbances marked out. By far too, little attention is paid to these by-gone periods of storm. They have perhaps been a nine-days' wonder, at the time of their occurrence, but were soon forgotten. Occasionally, to the surprise of most people, and after a storm of unusual severity over a continent, some observer draws attention to the fact that during such and such year and

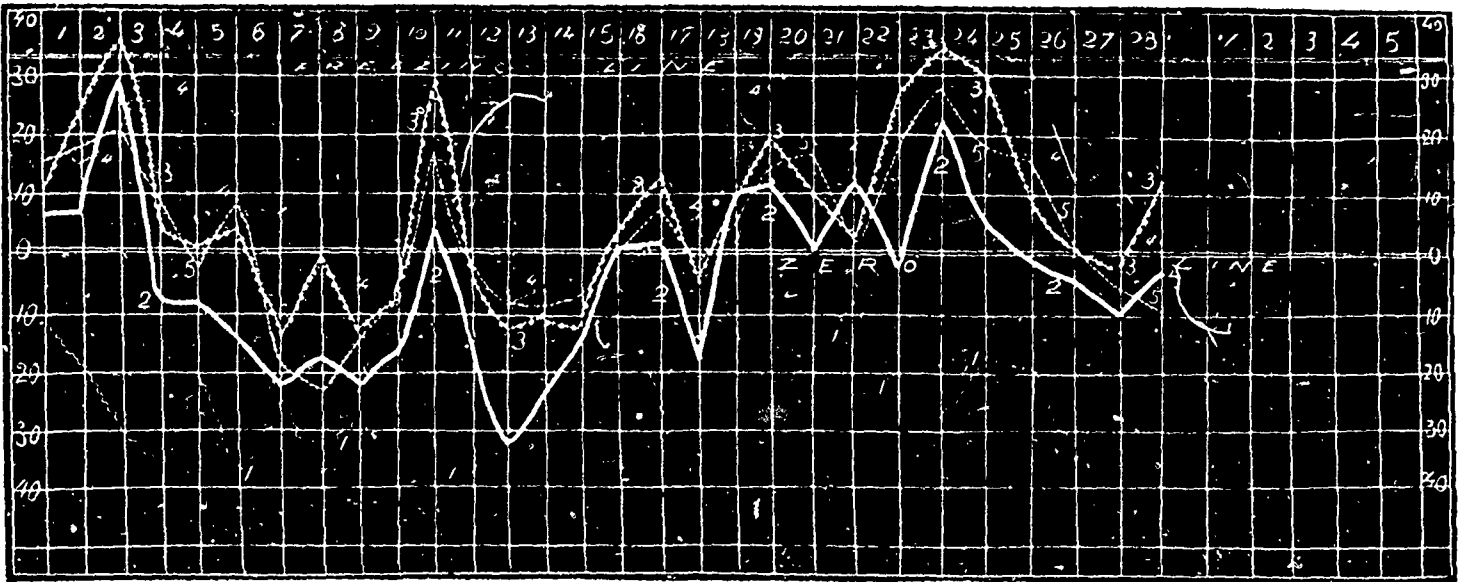
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CHARTS.

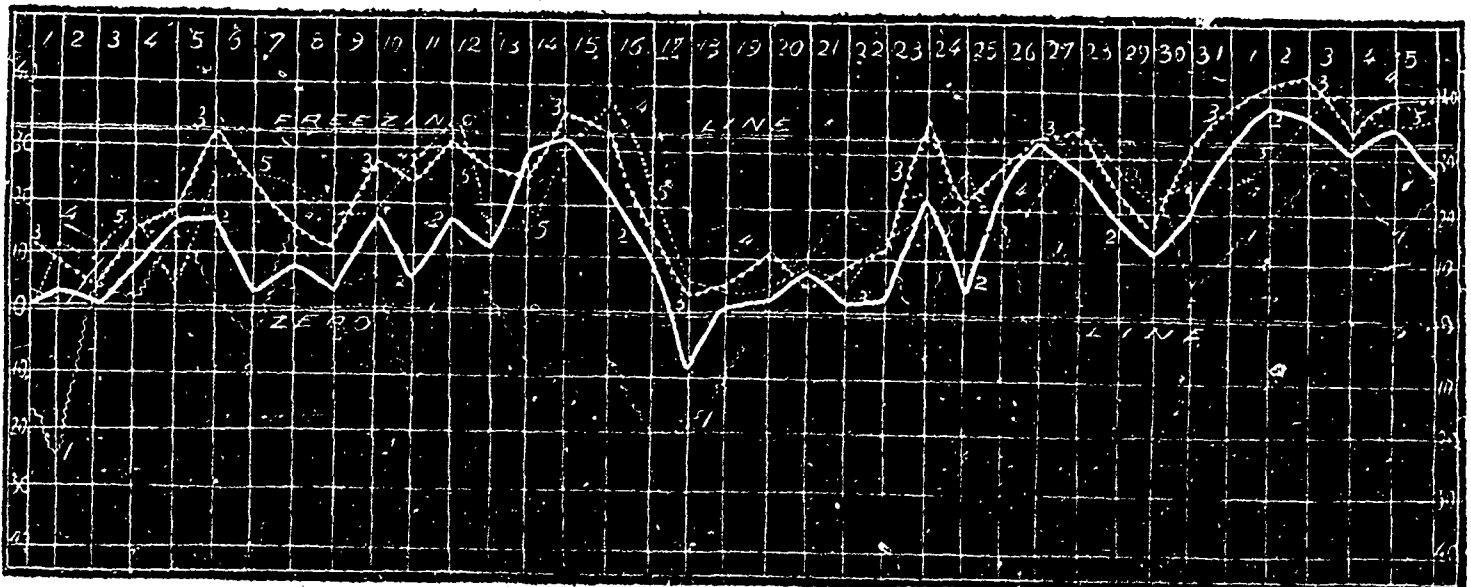
JANUARY, 1875.



FEBRUARY, 1875.



MARCH, 1875.



close to the same dates a similar storm occurred—and at the same points. Now, what we desire to direct attention to, is, the fact or probability that such a storm might have been anticipated some time in advance by a careful student of back weather records—provided he was possessed with these for a considerable period of back years without, at present, enquiring into the prime causes, we may simply state that in our past meteorological history, several atmosphere disturbances have occurred again and again on precisely the same dates,—so have hot spells and cold "dips." During a season of disturbance generally, there are no reasons why (by a close and careful look into the weather history of the past) we may not attempt a forecast with every prospect of its resulting successfully. In any case, a warning so given, of the probability of such and such conditions at this of that particular period, would do no harm, and might result in much good. We again say, *do not put by your weather records, but keep them right before you. Don't sit upon them, and tell every one you've got them. Say nothing about them if you like but use them. Study the past and watch the future*, is our text. We have made many "a hit" by so doing. Doing what? Why, by simply remembering the weather when most others had forgotten all about it. *Experientia* does it—or, so we have found it.

The Scrap Book.

"Every farmer should keep a book in which to paste agricultural scraps. Every one in reading a paper will see a number of things he will wish to remember. He will perhaps see suggestions the value of which he will desire to test, or hints which he will want to be governed by in future operations, and yet, after reading the paper he will throw it down and will probably never see it again. In such a case all the valuable articles will be lost. To prevent such a loss, every reader should clip from the papers such articles as he desires to preserve and remember, and paste them in a scrap book. Such a book at the end of a year or two will be very interesting and valuable.—*Witness*."

Yes, a scrap book is a most valuable acquisition or addition to the farmers book-case. In it he should also place all weather disturbances he may experience, hear or read of for his own particular, and other sections of country, for these disturbances will occur again and very probably in the same sections and about the same dates three times out of five other years. It is to such a scrap-book I attribute some of my most successful attempts at weather forecasting. Most farmers get, at any rate, one weekly paper. Clip from this all items relative to the weather, and paste in your weather column of scrap-book with dates attached. Add some original notes for your own immediate neighborhood, and by degrees you will find that you are forming a very interesting piece of history of the year you are in for future comparison. If you have a thermometer add the readings for early morning, noon and evening to each day's record, but in any case preserve your newspaper clippings. If you never make use of them somebody else will. Make your scrap out of old brown or wrapping paper, and pencil your daily notes on white paper and paste them in.

Reversed Predictions.

—An agent in one the large cities in the United States, I shall not say which, writes as follows: "I sell your *Weather Bulletin* here. Thousands of workmen pass my windows daily going to and coming from their work, and crowds of them stop to read your paper in my window finding that method cheaper than paying five cents for it. Recently I thought of turning the paper upside down to see how this would work with them. Well it did bring in a few customers but still every morning and evening at my windows in the most ludicrous positions, and almost upside down themselves trying to read the reversed paper stood these anxious enquirers after the weather who evidently don't think your predictions read as well in the reversed way as straight up and down. This, however, is but one class; I call them the outside readers. There is another and more difficult lot to deal with, namely the "inside readers." These last I cannot circumvent. They enter the store when your paper first appears, coolly sit down and read it and then return it to the counter and leave. Such individuals too are not of the middle classes but apparently among the most respectable of our citizens. I merely mention these facts to show you what book and news agents have to content with. I suppose your paper is read more than any book or paper on my counter and more anxiously sought after; yet if this can be read for nothing and five cents saved, there are hundreds who are ready to act this mean part."

Manufacture of Bone Phosphate.

SIR,—I want to know how to make bones in to phosphate.

1. What is the name of the acid used for the dissolving of bones?
2. What is the price per gallon in Montreal?
3. What is the proportion used?
4. Will the bones of a horse be as good as those of a cow, or are they any good at all?
5. What quantity per acre is used?
6. What is the time to sow it?
7. What is the price per 100 pounds in Montreal?

ENQUIRER.

Stanhope, P. E. I.

1. Sulphuric acid. 2. It costs three cents per lb. when brought in large carboys containing 170 lbs. The carboy costs two dollars more but this will be refunded when it is returned in good order. In small quantities it costs six to seven cents per lb. 3. Break the bones up into small pieces with a sledge, and steep 200 lbs. bones in 300 lbs. of water for several hours, then add 100 lbs. sulphuric acid. 4. The bones of a horse are equally as good as those of cows or sheep. 5. From 300 to 400 lbs. 6. The proper time to sow it is in the spring, and just before a shower of rain. 7. The price of phosphates of lime in Montreal is \$4.75 per barrel containing 250 lbs.

Rules For Farmers.

1. Do not over crop yourself; or in other words, do not undertake more than you can accomplish with ease.
2. Have a regular system in all you do, and do every thing with a clear understanding as to result and effect.
3. Keep your lands well up to a good standard by a proper fertilizing and a judicious rotation of profitable crops.
4. Keep none but a good stock, and see to it that said stock is kept in good condition.
5. Take good farm papers, together with a few standard farm books written by practical men, who deal only in facts.—*Southern World*.

At the Seaside.

London Fun.—Stuffles: Yes, my dear fellow, I assure you that I swam out three miles yesterday. I then dived fifty feet and struck my head against a sunken rock. I floated about in almost an insensible state for three hours, when I came across an old scull which I hung on to for ten hours. I was picked up off Dover simply covered with jelly fish. But I'm afraid you don't seem interested by my story.

Waggles: "Quite the reverse, de. hoy, I am very much so. To tell the truth, I'm a bit of a liar myself."

ALTHOUGH the thermometer in the neighborhood of Duluth and Ashland sometimes reads, in the winter season, like a meteorological record of the Arctic regions, the climate, owing to the exceeding dryness of the atmosphere, is not very severe. A lady who has lived in Ashland for ten years past finds no difficulties in wintering her roses, of which she has thirty varieties, out of doors, her *Hermosas* enduring exposure without suffering from the frost. *Com.*

If honest fame awaits the truly good; if setting aside the ultimate success excellence alone is to be considered, then was his fortune as proud as any to be found in the records of our ancestry.—*Lucan*.

Many who seem to be struggling with adversity are happy; whilst some in the midst of riches are miserable. This is the case when the former bear the pressure with constancy, and the latter employ their wealth thoughtlessly.—*Tacitus*.

Sonnet.

The old man sits at his cottage door,
In the gleam of the dying day,
His heart is calm as the silent shore,
When the winds have passed away,
His thoughts as still as the fragrant breeze
That whispers of peace to the azure seas.

He is the beauty of earth and air,
The glow of the twilight hours;
He feels that glory everywhere
Is breathing from woodland flowers,
And his heart grows young, though his years are old,
At the wondrous sight of the sunset gold!

For Memory comes with a gentle hand,
And beareth on Fancy's wings
His thoughts to her own immortal land,
Where the Past forever sings
Of joys that brightened the fair days fled,
Ere friendships faded with friends long dead.

And the Past, though sad, for the love that is gone,
Is sweet to the old man's mind;
Like the birds that sang in those years, have flown,
The hopes that he hath left behind;
Yet Memory brings from each bygone day
Some gift of peace for his lonely way.

And the children love that old man Jear
As he sits in the twilight there,
Listing a music they cannot hear,
From the sea and the voiceful air;
And gather around, like glad some flowers,
As he tells them tales of the vanished hours.

And so the Present is made more bright
By the lessons the Past has taught,
As the East reflects the wondrous light
Of the West, by sunset brought;
And though his vision is growing dim,
God maketh his pathway bright to him.

His age is peace; yet he loves to think
That a deeper than earth can know
Shall be his, when his tranquil soul shall drink
Of a balmier twilight glow,
In that happier Home, where his thoughts at last
Shall yearn no more for the distant Past.

Ice-Making in India.

From Chambers' Journal.

Let me allude to an industry peculiar to the cold weather, which, except in small stations distant from the rail, is fast dying out, and that is the manufacture of ice. When I came out in 1853 Calcutta, Madras, and Bombay were wholly dependent on American ice, supplied by the Tudor Ice Company, and retailed at two annas a *scr*, that is two pounds of ice brought from America was sold in India for 3d. The *mofussil* (up country) was entirely dependent on artificial ice, which could only be made where the cold weather was really felt; in all other parts we were obliged to cool our drinks with saltpetre and sal ammoniac, or, during the hot winds by placing the bottles before the *khus-khus* tatties, or swinging them in a basket covered with wet straw. By these appliances we could cool our drinks down to 65° Fahr.; or by carrying on the cooling with fresh supplies of salts, we could even freeze water. But the process was tedious and expensive. Science came to our aid, and sulphuric ether and ammoniac machines came gradually into vogue, and latterly Carré's wonderful pneumatic machine, which I have seen produce ice in two minutes in a temperature of 65°. With their great appliances, block-ice is now available in districts where it could not formerly be had at from one and one-half to two annas per *scr*. To return to the old process—it depended entirely on the production of cold by evaporation, as also on sufficient cold weather and presence of the dry west wind; the east wind being absolutely fatal to the production of ice. The essentials for the process are: 1. Exposed and treeless ice-fields, which are partitioned off into four or five feet squares, in which two or three inches of straw are laid down. 2. Myriads of flat, porous earthen saucers, six or eight inches in diameter. 3. An unlimited supply of water. 4. An army of coolies, and water-carriers. 5. The ice-pit. This, the most important adjunct in the process, is very carefully constructed; a great pit is dug, and in it rests a huge timber cone, the space between it and the sides of the pit being rammed with charcoal, chaff, or straw as non-conductors of heat. The cone itself is lined thickly with coarse flax or blankets and then a layer of matting; over all a straw hut, with very thick roof and walls and a very small entrance, is constructed. Now for the process. Whenever the outside thermometer reads 42°, then ice can be manufactured by evaporation. Half an inch of water is poured, over night, into saucers by *bhersties* (water-carriers); then at 2 A.M. a great drum is beaten at the pit to summon the coolies, who assemble in hundreds, each armed with a scoop, with which the ice is skillfully turned out of the saucer into an attendant vessel, and well rammed into it. When full it is taken to the pit, emptied there, and again rammed down. Thus all the ice has a chance of consolidating by regelation, and in good season thousands of pounds' weight of ice may be stored, according to pit-room available.

The Mental Effect of Earthquakes.

The outbreak of new earthquakes, first at Agram, then in Ischia, and now in Chios, the last the most destructive of all, and costing thousands of lives, within a few weeks of each other, seems to show that a period of earthquake-shock may have begun which may affect, to an extent by no means inconsiderable, the history and life of our century. No one can doubt that the earthquakes and volcanic eruptions which visited the same general region, but more especially Asia Minor and Italy, during the first and second centuries of our era, produced great effects, not only on the minds and characters of that generation, but even on the distribution of population, nor that the earthquake at Lisbon, in the last century, produced almost as great a shock on the thoughts of men as it produced physically on the immense region over which its effects were felt, a region which included almost all Europe, part of Africa, and part of the American continent. A spell of earthquake of any violence and duration, which should extend over such a field as that, would, in a time like our own, when every influence is intensified by the simultaneous transmission of the impressions it produces to all parts of the globe, produce the most powerful effects, not simply on the countries

which might suffer from it, but on all the world. No physical phenomena, however dreadful, seem to produce the same sense of paralysis as earthquakes. A correspondent of Captain Basil Hall, who was in the earthquake at Copiapo, in 1822, describes the effect on the mind as something which begins before any other sign of the earthquake has manifested itself at all,—an anticipatory horror, which is even more marked in the case of lower animals. "Before we hear the sound, or at least are fully conscious of hearing it, we are made sensible, I do not know how, that something uncommon is going to happen; everything seems to change color; our thoughts are chained immovably down, the whole world appears to be in disorder, all nature looks different to what it is wont to do, and we feel quite subdued and overwhelmed by some invisible power, beyond human control or apprehension." In the Neapolitan earthquake of 1805, these anticipatory signs were most remarkable in relation to the life of the animal world. An Italian writer, quoted in Mr. Wittich's "Curiosities of Physical Geography," says: I must not omit in this place to mention those prognostics which were derived from animals. They were observed in every place where the shocks were such as to be generally perceptible. Some minutes before they were felt, the oxen and cows began to bellow, the sheep and goats bleated, and rushing in confusion one on the other, tried to break the wicker-work of the folds; the dogs howled terribly, the geese and fowls were alarmed and made much noise; the horses which were fastened in their stalls were greatly agitated, leaped up, and tried to break the halters with which they were attached to the mangers, those which were proceeding on the roads suddenly stopped, and snorted in a very strange way. The cats were frightened, and tried to conceal themselves, or their hair bristled up wildly. Rabbits and moles were seen to leave their holes, birds rose, as if scared, from the places on which they had alighted; and fish left the bottom of the sea and approached the shores, where at some places great numbers of them were taken. Even ants and reptiles abandoned, in clear daylight, their subterranean holes in great disorder, many hours before the shocks were felt. Large flights of locusts were seen creeping through the streets of Naples towards the sea the night before the earthquake. Winged ants took refuge during the darkness in the rooms of the houses. Some dogs a few minutes before the first shock took place awoke their sleeping masters, by barking and pulling them, as if they wished to warn them of the impending danger and several persons were thus enabled to save themselves." What it is, before the sound or shock of earthquake is felt, which warns both animals and human beings of the approach of some dreadful catastrophe threatening the very basis of their existence, no one, of course, can say, since the impression made upon the nervous system is, at least as regards our own species, evidently one of general disturbance, and not one to which experience attaches any explicit significance. It may be, of course, that some very great change in the magnetic conditions of a spot threatened with earthquake, leads to that extreme excitement of mind exhibited by all living creatures previous to the onset of the earthquake. This, however, is pure conjecture. What is interesting is that a certain blank consternation seems always to be the characteristic herald of an earthquake, as well as the characteristic result. That it should be the characteristic result, is, of course, no wonder. The very condition of human life is the solidity of the not very thick earth-crust on which we live, and when the solidity is exchanged for positive fluidity, as it is in the worst earthquakes, it is natural enough that stupefaction should be the result. In one of the Calabrian earthquakes, it was discovered that large pieces of ground had so changed places, that a plantation of mulberry-trees had been carried into the middle of a corn-field and there left, and a field sown with lupines had been carried out into the middle of a vineyard. The Italian lawsuits which resulted from this liquefaction of "real" property may be easily imagined. Still stranger, in the earthquake in Ruobamba, in 1797, Alexander von Humboldt found that the whole furniture of one house had been buried beneath the ruins of the next house. "The upper layer of the soil, formed of matter not possessing a great degree of coherency, had moved like water in running streams, and we were compelled

to suppose that those streams flowed first downwards, and, at last, rose upwards. The motion in the shocks which were experienced in Jamaica (July 7th, 1692) must have been not less complicated. According to the account of an eye-witness, the whole surface of the ground had assumed the appearance of running water. The sea and land appeared to rush on one another, and to mingle in the wildest confusion. Some persons who, at the beginning of the calamity, had escaped into the streets and to the squares of the town, to avoid the danger of being crushed under the rains of the falling houses, were so violently tossed from one side to the other, that many of them received severe contusions, and some were maimed. Others were lifted up, hurled through the air, and thrown down at a distance from the place where they were standing. A few who were in town were carried away to the seashore, which was rather distant, and thrown into the sea, by which accident, however, their lives were saved." Such a liquefaction of all that is most solid in our world, seems a grim enough realization of the prayer of the prophet, "Oh that thou wouldst rend the heavens, that thou wouldst come down, that the mountains might flow down at thy presence," for the mountains do really flow down, in earthquakes, but the effect of that flowing is a consternation such as no other phenomenon of physical life, not even the worst darkness of volcanic eruptions, ever produces. The loss of everything stable at the basis of human life, is the collapse of the ordinary foundations even of the spiritual life itself, though if that life has got its roots firmly into the heart, the original foundations may fall away, without impairing the vitality of that which at first had propped itself upon them. Put where this is not the case, nothing tends more to that truest nihilism, which, so far from thinking it worth while to destroy anything, finds both destruction alike childish under the tottering of the very pillars of life, than the phenomena of an earthquake. Amidst the moral shocks which the collapse of the very earth itself produces, only a faith which has profoundly convinced itself that the physical frame of things is a mere scaffolding, by the lines of which the spiritual dwelling of man has been fashioned, remains at all. Positivism itself, with its hierarchy of the sciences, all of them resting on the material life has the substratum of everything, along with the menace to that physical foundation on which it bases its whole system. It is curious to think what such races as the Teutonic would become under the influence of frequent earthquakes. Their "solidity" of character, as it is called, largely consists of the confidence they feel in the sameness of all nature's ways, and whether it would survive that confidence, and outlive the constancy on which it was nourished, is very doubtful. An English squire, for instance, whose timber and crops had changed places with the timber and estates of his next neighbor, would certainly not be recognizably an English squire much longer. An English merchant whose stock of satins or teas had vanished under the establishment of his rival, would find the world so very much out of joint, that he himself would probably become an unmeaning phenomenon. It is, indeed, clear that even rare periodical attacks of earthquake would render the existence of a great capital impossible, and the character of an agricultural population quite different, and probably much more capricious than before. And not unreasonably so. Spiritual faith, even if it remain, cannot well rule the actions of physical beings in a physical world which has lost all aspects of constancy. Indeed, repeated shocks to the physical basis of things, though they may well test the strength of faith, cannot of course be often repeated on this earth of ours, without transferring all the characteristic operativeness of faith to a world of another kind. Faith is faith in divine constancy, and the constancy which has ceased to govern our bodies must be discoverable in some other region, not that of our bodies, if faith is to be of use. Morally, then, the only use of earthquakes must be to test the growth of a spiritual faith in a world and life beyond the reach of earthquakes. Clearly it cannot strengthen or educate such a faith. It can only sift the false faith from the true, and accord to the true its triumph.—*Spectator*.

He who comes up to his own idea of greatness, must always have had a very low standard of it in his mind.—Hazlitt.

From the Standard.

The Ethnology of Eyes.

The eye is notoriously one of the most characteristic features of the face. It is "the window of the soul," and an index to many of the owner's mental and moral characteristics. We have the wild eye and the gentle eye, the stern eye and the melting eye, the swimming eye and the voluptuous eye, the eagle eye and the shifty eye, the eye that is the herald of the words that are to follow, the snaky eye of the Oriental that bespeaks treachery and cunning, and the impassive, unreadable eye of the Indian that suggests a character lying in ambush. Not to enumerate all the eyes that the poets and the lady novelists have so lavishly described, we all know the boiled eye that bespeaks the sodden mind; the saucer eye, which, like the rabbit-shaped incisors, is too much of a good thing; and the eyes not unfrequently seen in the New Cut and the Old Bailey, which look for all the world like holes burnt in a blanket. But it is as an ethnic or racial mark more than as a mental or moral index that the eye is interesting. In a community so mixed as ours we have all colors of eyes. But, as a rule, blue eyes go with fair hair, and fair hair is an index of Teutonic origin, unless we consider, with Dr. Barnard Davis and Dr. Beddoe, that the combination of black hair with dark blue or grey eyes, so common in some districts of these islands, indicates Celtic blood. A German or a Norseman with flaxen hair and black eyes is about as rare as a Spaniard or an Italian with blue ones, so that it is safe to say that a nation with a preponderance of blue eyes has also a majority of fair-haired citizens, and therefore a marked prevalence of the Germanic, Celtic, and possibly the Slave elements in its population. Now we know that the latter race emigrates to the New World in numbers so few as scarcely to affect the general result, while the Latin races, with dark eyes, seek, for the most part, new homes in more southern latitudes than the United States. The glass eye statistician unconsciously brings out this point. Twenty years ago many more dark than light eyes were sold in America but from that date there has in the sale of dark eyes been a perceptible falling off. About twenty light eyes are now sold to one dark. In Boston the percentage is even higher, viz., about thirty-five blue or light eyes to one brown, whilst on the other hand in New Orleans fifty dark eyes are sold to one light one. Now, were it possible to change the color of the eye to be matched, it might be supposed that the facts noted were due to the change in taste, which recently prescribed fair hair as the fashionable hue. This is, however, out of the question. Hence the only explanation is, that the vast German and Scandinavian immigrations of the last two decades have utterly swamped the mixed English population which previously occupied the Northern and Western States of the Union; whilst in the South the original French and mixed negro races have not been diluted by the fair-haired, blue-eyed northern arrivals. Curiously enough, the recent census entirely confirms this theory deduced from the return of glass-eye sales. In Nevada, as might be expected, 70 per cent. of the inhabitants are of foreign birth; in California, 51; in Arizona, 65.5; in Dakota, 65.5; in the Northern and older Western States, about 32, on an average, while in most of the hotter Southern States there is practically no foreign element whatever. The same assertion may be made for the purely rural districts of New England, the immigrants finding homes chiefly in the large manufacturing towns. In the cooler ex-slave states there is on an average ten per cent. of foreigners; in the others less than two per cent.; while in North Carolina the people of foreign birth resident in the state are barely a quarter of one per cent. But this immigration consists almost entirely of the Teutonic and Celtic races. The agricultural states are peopled by a preponderance of Germans and Scandinavians. Whole districts are inhabited by settlers from Mecklenburg, Denmark, Sweden, or Norway. The German tongue is often the only one generally spoken over one or two counties, and in others Norse will as generally be the language in which the vernacular non-official intercourse of the settlers is carried on. In Canada there are Gaelic districts. But in the States the Highlanders mix with the rest of the population. Comparatively few of the Irish or French—out of Canada—take to farming, and Erse is in the New World an unknown tongue. In

parts of Louisiana, Florida, Arizona, California, and New Mexico there was, and is still, a large Spanish element. But it is disappearing before the Anglo-Saxon and getting confined to certain districts, so that even there the blue eyes are beginning to predominate, except in the warmer regions, which have no attractions for the Northerners. A certain amount of negro blood has permeated the South and still more intensified the prevalence of black eyes, whilst on the Indian frontier the aboriginal skin, hair, and iris are more frequent than the moralist might desire. It has been mooted whether the white race is yet fully naturalized in the New World and it has been suggested that it would die out when the stream of navigation from Europe stopped. It is certain that in Massachusetts the native American women of the old stock have, as a rule, few children compared with the Irish and German immigrants, and that this peculiarity follows the fresh arrivals to their homes in the West. In any case, it promises a preponderance of the blue-eyed race; for the black-eyed Irish Celts are scanty in numbers compared with their red-haired countrymen, as a something of Bowery on an election day will amply prove. It is therefore evident that the blue-eyed men are to rule the New World. In time the two great streams that at present flow apart will gradually coalesce. The Teuton and the Celt will become one race, and a race of which the world may well be proud. The impulsive, reckless disposition of the one will be sobered by the grave, rather parsimonious, discreet nature of the other. The quick-brained Celt will supply fire to the dull, laborious Teuton. Hence, from the ethnologist's point of view, the drawers of the Chicago glass-eye dealer are pregnant with the promise of mighty "nations yet to be." In the rattle of their contents, the thoughtful politician must hear

The first slow, sullen rush of waves.
Where soon shall roll a human sea.

From Nature.

The Shining Slave-Maker.

(*Polyergus lucidus*.)

The Rev. H. M'Cook is as fortunate as he is energetic in his studies of the American ants. At the December, 1880, meeting of the Academy of Natural Sciences of Philadelphia he read a paper on the discovery at the foot of the Alleghany Mountains, near Altoona, of a nest of *Polyergus lucidus*, the American representative of the legionary ant of Huber (*P. rufescens*), an ant associated with that author's discovery of ant nests, in which certain ants have associated with them, in sort of slavery, ants of another species. The nest had four gates separated a few inches from each other; the chambers were placed above the other, united by tubular galleries. In an inner ovoid chamber numbers of ants, male and female, appeared; mingled with these in large numbers were workers in three forms—major, minor, and dwarf of *Formica schauinslandi*. A portion of the excavated nest was broken into, and on the next day but one was visited. None of the shining ants were at work, but the "slaves" were very busy cleaning out the galleries; a portion of the slaves were engaged in an extensive migration; a few were carrying their fellows, but for the most part the deportation was confined to the males and females of the shining ants. It was wonderful to see the large virgin-queens carried up the perpendicular face of the cutting for eighteen or twenty inches, and then for the distance six feet over the ground and through the grass, and this in a few seconds over a minute. The shining ants are able to take a most wonderful grip. One of them had fallen under the displeasure of another, who held her firmly grasped by the middle thorax. Anxious to preserve the colony from unnecessary loss, Mr. M'Cook lifted the two out on a point of a toothpick, laid them on his hand, and thrust the fine point of the quill between the jaws of the aggressor, and so teased her that she released her fellow. The rescued ant instantly clasped the palm of his hand, threw her abdomen under her, and then, with back curved like that of an angry cat, sawed and tugged away at the skin until an abrasion was made. The other ant still clung fast by her mandibles only to the toothpick's point, her body stretched out into space, her limbs stretched outwards, except one hind leg, which was a little bent upward, and

thus without any perceptible support except that which her jaws gave her upon the quill-point, she hung outstretched for several minutes. About a month after its discovery the nest was again visited; it was abundantly peopled; the winged forms of the shining ant were however gone. Having succeeded in colonizing these ants Mr. M'Cook was able to confirm in many particulars the statements of Huber, Forel, and others, but he never happened to see the slaves feeding their masters. He noticed that they seemed to like to move towards both warmth and light, but he does not seem to have settled the question whether they would not prefer the warmth without the light. They would appear to be very clean in their ways and persons. Various experiments seemed to establish the fact that these slave-makers always keep a guard ready at once for any attack.

Chambers Journal.

A Sheep-Eating Parrot.

A singular bird has recently been added to the collection in the Zoological Gardens, London. This is none other than a carnivorous parrot, whose love of animal flesh manifests itself in a very decided predilection for mutton. There are two things which the naturalist are remarkable in connection with this bird. First, it is, in respect to this flesh-eating propensity, an exception to the whole family of parrots, which are frugivorous, living on fruits, seeds, leaves, buds, and the like; and second, this carnivorous taste is not a natural but an acquired possession, the species of parrot in question having been till a few years since frugivorous, like others of its family.

This curious bird is the kea (*Nestor notabilis*) or mountain parrot, and comes from New Zealand. The general color of its plumage is green; its length from point of bill to extremity of tail, is twenty-one inches; its bill is about two inches long, the upper mandible being curved, and very strong. It inhabits the higher wooded glens and recesses of the mountainous districts of New Zealand, and, like the owl, is generally nocturnal in its habits. The kea was first made known to science in 1856. In the time of Maori rule, the bird was as innocent and harmless in its habits, as respects its food, as any other of the parrot family; and it was not till the higher tracts of country were utilized by the early settlers as runs for sheep, that the kea was tempted to desert its fruit-eating habits, and to join the destructive army of the carnivora.

About 1868, it was noticed that the sheep-shearing season on the upland runs that many sheep were suffering from sores or scars, more or less recent, on the back, immediately in front of the hips. Curiously enough, it was observed that in all the animals so injured the wound was in precisely the same place in each—fairly above the kidneys. In some cases [says Mr. Potts, who was contributed an article to the *Zoologist* on the subject], the part affected had a hard, dry scab, or merely a patch of wool stripped off; others showed a severe wound, in some instances so deep that the entrails protruded. The animals so injured were invariably those that were in the best condition; and many discussions ensued as to what could be the cause of this singular state of things. At last a shepherd gave it as his opinion that the injury was inflicted by a kind of parrot, rather a tame sort of bird, that was to be met with in the higher ranges; but the shepherd's opinion was only laughed at. Yet the shepherd, after all, was found to be right. In connection with the stations on sheep runs in New Zealand, there is a meat-gallows where the carcasses of sheep killed for food are kept; and it was observed by the shepherds that the keas were in the habit of visiting the gallows and breaking off bits of mutton fat with their strong beaks. Soon afterwards, some of the hands actually saw a parrot on the back of a sheep, plucking and tearing the wool and flesh on a precisely similar spot to that where so many had been found to be fatally wounded.

There was no doubt about the keas being the offenders, and means were at once taken to have their numbers reduced. Since then, a mortal enemy has existed against them on the part of the shepherds; and justly so, as it is found that from three to five per cent. of every flock is so wounded or killed.

In some individual instances, the ratio of destruction has been much higher. On one station on the Matatapu, out of a flock of twenty Lincoln rams, nineteen were within one month killed by these parrots. On another run, a flock of three hundred and ten strong, young wethers were, within a period of five months, so seriously injured by the keas, that at the end of that time only one hundred and five remained alive. In consequence of this destruction, men were engaged to kill the bird at a shilling a head; and these men, taking advantage of its nocturnal habits, now range the mountains at night, lighting fires to attract their game. In the daytime, they rest and prepare the skins for sale. But the kea, with the cleverness and cunning of its tribe, has grown very shy and wary, and knows very well when it sees a man carrying a gun, what he is likely to do with it.

Mr. Potts gives a striking account of the cruelty and rapacity of the keas in the prosecution of their horrible taste for sheep fat, the part especially liked by them being the fat that surrounds the kidneys. With this view, they do not hesitate to tear open the animal's flesh till they arrive at these organs, after tearing out the fat of which, they leave the poor animal to linger on or die in excruciating agony. "Sheep," says Mr. Potts, "whilst being got out of snowdrifts, are often mortally hurt by the attacks of the keas; especially are the birds prone to molest those carrying double fleeces, as though they knew how firm a foothold they could maintain with their grip. When one of these sheep, temporarily exhausted with its exertions in toiling through deep snow under the burden of two years' growth of wool breaks off from the mob and leaves the track, desperately floundering into deeper snow-wreaths, a flock of parrots, ever watchful as they hover round soon perceive their opportunity for mischief; they alight close to the spot where the sheep, unconscious of approaching danger, stands gazing fixedly in a state of helpless stupidity; gradually hopping or moving towards the victim with some show of caution. One of the keas at least settles on the back of the sheep, which terrified at the strange visitor that thus besets it, bounds away; the bird now rises only to alight again on the same place, and clutches into the wool with its sharp claws, retains its hold more firmly and tenaciously. In vain the tortured animal it the direst agony seeks to rid itself of its cruel persecutor, that boldly keeps its vantage; after running and struggling some distance, its efforts to escape becomes feebler; it is at length so hard pressed that in a few minutes it yields passively to the tearing and searching beak of the kea."

These repulsive, flesh-devouring propensities may have been acquired through the bird's being forced in severe winters, to approach the stations in hopes of finding food, and there feeding on the flesh in the meat-gallows, and thus gradually forming a carnivorous appetite of such strength, that its former frugivorous tastes are entirely destroyed, and flesh now forms its sole food. The kea in the Zoological Gardens was struck down while it was in the act of attacking a sheep; but the man did not succeed in capturing it till it had torn his cloths in many places and severely lacerated his hands. Its food consists mainly of mutton, raw; it does not care for cooked meat, but will take it if very hungry. Occasionally it will take beef, and is fond of pork. But its vegetarian tastes seem almost completely eradicated, for it will not touch bread, though it likes the seed of sow-thistle. It is altogether a remarkable and curious bird.

His Crazy-Bone.

The man that struck his crazy-bone
All suddenly jerked up one foot
And hopped three vivid hops, and put
His elbow straight before him, then
Flashed white as pallid Parian-stone,
And clinched his eyes—and hopped again.

He spake no word—he made no moan—
He muttered no invective—but
Just gripped his eyelids tighter shut;
And, as the world whizzed past him then,
He only knew his crazy bone
Was stricken—and he hopped again.

J. W. RILEY.

Mental Work.

From Modern Thought.

Mental work, can, as a rule, only be carried out for lengths of time and successfully by persons who are originally of very sound constitution. There are very few exceptions to this rule, and in making this observation I am speaking from an experience which few possess, inasmuch as for a long part of my professional life I have been brought specially into contact with those who are engaged in almost all the departments of literature. My experience is that those who are not habitually strong and have fair health pass out of the work of literature altogether, some by death, but far more by transition into other spheres of labor. I am quite aware of course, that there are exceptions to this rule, and that some very bright and great characters in letters have not been of the healthiest type. Pope has often been adduced in illustration of this fact, and Johnson and Cowper, and Keates. But these must really be taken as exceptions, and in regard to Johnson I should infer that, although he was of a nervous, lymphatic temperament, and of strenuous diathesis, yet that he was very strong, that he had the facility of acquiring rest and strength through prolonged legarthy, and was capable of sustaining periods of excessive fatigue; that he wrote "Rasselas" in three weeks is perhaps a sufficient proof of this supposition. Putting aside the exceptions, the evidence of the general rule is extraordinarily clear. Defoe must have been a model of strength and endurance; Scott could hardly have been less favored; Newton, though delicate, was always healthily active when he could get his eight or nine hours of sleep; Christopher Wren must have been a marvel of strength, and in a word all in the main who had lived to influence the world by their thought have originally had the sound mind based on the sound body. Here, then, alone we have a basic reason why mental workers should, on the whole, present a good range of longevity. A second explanation of the advantages of mental work is that such work, by the love of it, by the absorption in it which it brings to the worker, relieves the mind from the corroding influence of the passions, and saves thereby the wear and tear of life in the most extreme degree. A poor man of letters is, in fact, far better off in respect to health than a rich man, who is fighting to amass and hold his riches. There is nothing like it as a means of retirement from the hurry-scurry of life. Harriet Martineau it will be remembered by many, tells in her autobiography how she would sometimes sit down to literature, and looking up at the clock, would discover that several hours had passed away, as if they had been minutes rather than hours, and I can for my own part fully bear out this kind of experience. I do not say that this degree of absorption is in itself intrinsically good; I am sure that by the interruption of physical activity which it induces, it is a source of injury, but it is safely compared with the bustle, strain, expectation and hazard connected with other forms of human labor. A third explanation is that mental work, except when carried to extremes, favors nutritive changes, and at the same time prevents the worker from indulging in hurtful luxuries and modes of life that interfere with the performance of successful work. The successful mental laborer is soon made conscious of the truth that if he indulges heavily at the table, that if he partakes freely of wine or other strong drink, that if he reduces his hours of sleep below the natural requirement, he cannot perform his necessary amount of labor, and that what is done under such circumstances fails to come up to the mark, and had better have been let alone altogether. So it occurs that our best men, those who leave behind them the records that live in history, pursue more even lives than their fellows, and in that way attain a greater length of days. A further explanation of the advantages of mental work is supplied in the circumstance that mental workers are not exposed to physical shocks and vicissitudes of weather like persons engaged in less protracted occupations. They may travel, and many of them do travel far and wide—it is a propensity with them to see the world—but travel, in their case, partakes of refined pleasure, in which they are pursuing their avocation with variety of thought and observation, and by which the weariness of travel is greatly alleviated;

while in their own homes they are protected from extremes of heat and cold, and are able to live a methodical life, with regularity of meals, and regularity of times for recreation, rest and sleep.

A Fog Bow Before Sunrise.

The phenomenon of the ordinary rainbow is familiar to every observer of nature. White fog-bows, or 'fog-eaters,' as they are called by the sailors, are frequently visible in some localities favorable for their formation; and they are generally regarded as indications of clearing weather. 'A fog-bow was observed,' writes Mr. H. C. Hovy, 'on the morning of the 8th of January, from my residence on Fair Haven heights, near New Haven, Conn., at the mouth of the Quinupiac river, and about 100 feet above the sea level. No rain was noticeable in any quarter, but the valleys were filled with fog, above which the hilltops stood like islands. At exactly ten minutes before sunrise (due at 7.26 a. m.), on looking westward I saw a brilliant arch of prismatic colors spanning the East Rock range, the highest point of which is 350 feet above the sea. As the sun arose the arch diminished in height and vividness, and by the time the orb was visible in the morning sky, the fog-bow had vanished.'

Wet and Dry Thunderstorms.

A correspondent of the London Times, writing from the Transvaal, South Africa, says; 'Every afternoon tremendous storms of lightning and thunder burst upon us. These were of two kinds—the wet and the dry. The first is harmless, though noisy; the second exceedingly dangerous. During the dry thunderstorms, which were prevalent toward the end of October, the lightning seemed quite stupefying. It was unaccompanied by either wind or rain. The angry flashes were followed almost simultaneously by awful crashes of thunder, which seemed to shake the earth. One or two tents were struck, and the grass was set fire to in several places within sight of our camps, but no life was lost, only some arms damaged. The dry thunderstorms were soon followed by wet ones. The rain, mixed up with enormous hail-stones, soused the thirsty earth, and every crack on the little veldt bore its burden of water to the Vaal, which rose and became impassable.'

From Nature.

Fish Mortality in the Gulf of Mexico

From time to time since 1844, a wide-spread destruction of all sorts of marine creatures has occurred all along certain well-marked out tracks in the Gulf of Mexico. In 1854 the fishes suffered all along the southern shore; in 1878 there was again an excessive mortality; in 1879 the plague again appeared; while in 1880, we learn from the recently published report of Inspector Ingersoll to Prof. S. F. Baird, it has been very intense. The poisoned waters occur in streaks or patches, sometimes near to one another, at other times many yards apart. These seem to drift with the flow of the tide, and ultimately become diluted. The most probable solution of this strange phenomenon is to suppose that eruptions of noxious volcanic gases arise through the bottom of the sea; certain it is that the marine life on the sea-bottom suffers first. Sponges, sea-anemones, mollusks, and the ground fish die in mass, and apparently at once. Upwards the deadly pestilence mounts, and the small fish swimming at or near the surface are killed by thousands, and float lifeless on the water. The large surface fish would seem to escape, and rarely is a mullet to be found destroyed. Fishing in such districts has to be abandoned, even although in the pure streaks the fish abandoned, for should a smack fill its well with the results of a successful catch it had to run the gauntlet of the broad patches of the poisoned waters, and if any of these were encountered, and entered the well, a few moments would suffice to bring about the death of every fish in the cargo. The keeper of the Egmont Lighthouse writes on February 21 in this year: "As the tide came in on October 17, 1880, there were thousands of small fish floating on the water, most of them quite dead. The next day the fish were dying all along the shore; between

October 25 and November to the stench was so horrible that it was impossible to go on to the beach. Sending my family to Manatee, the assistant keeper and myself shut ourselves up in our rooms, and kept tar, coffee, etc., burning day and night in order to stand it. The peculiar smell was like bilge-water. The fish I noticed dying acted as if crazy, darting in every direction, then giving up and floating ashore. After a very heavy gale from the south-west the bad and good waters got mixed up, and soon all the fish caught were fat and nice." As the cause of this strange phenomenon is still problematical, some discarding the idea of the evolution of subterranean gases, believing it to be the result of a poisoning of the water by an excess of rain-water discharged into the gulf by the rivers, others that it is owing to the water being saturated with the tannin derived from decomposing roots and stems of palmetto, sumach, oak, etc., it would seem highly desirable that Prof. Baird should institute a series of observations as to the chemical constituents at different times of the waters of these districts.

English Correspondence.

LONDON, June 17.

I am writing this morning under the influence of what I might almost call our third summer this year. The weather in England, even in January and the following months, was little colder than June has been up to nearly the present writing. A little spell of semi-winter weather followed; just enough to barely mark the change to a genial spring, which then brought us down to the beginning of June. But the last fortnight has given us an experience of cold and wet, which has been decidedly unpleasant and hard to bear. What with snow on the east coast and snow on the west coast, snow in Scotland, and snow even on our more southern hills, we may fairly claim to have had our little winter after all. The effect on the growing crops has, of course, been rather unfavorable. But the worst is check—not destruction. Growth is not so forward as we had expected it would have been by the middle of June. And haying has been delayed greatly. Indeed a good deal was cut before the cold wet weather set in, and has been lying out ever since, some being saved in little snatches. But the hay crop will be large and heavy, and may probably, after all, be mainly cut and housed in excellent condition, for the barometer has risen, the sun shines brightly and the air is warm and genial. This third summer may give us an excellent harvest after all.—*Witness.*

Moderation is the silken strings running through the pearl chain of all virtues.—Bishop Hall.

I see that time divided is never long, and that regularity abridges all things.—Madame de Staël.

A life spent worthily should be measured by a nobler line, by deeds, not words.—Sheridan.

BAY VIEW HOUSE,

FERRY BEACH, NEAR OLD ORCHARD,
BAY VIEW, MAINE.

The "Old Orchard Beach" the finest on this continent, is fifteen miles from the City of Portland, Maine. The Boston and Maine Railroad runs right along the Beach; and the Eastern is connected with it by a branch. It is thus in direct communication with all the world.

The beach itself is nine miles long, running the entire length of the sickle-shaped shore of Saco Bay. At low tide there is a carriage-drive along the hard sand of seven or eight miles. On the extreme points of the crescent inclosing the bay, are the Wood Island, and Cape Elizabeth Light Houses, the latter being through the White Mt. Notch, empties be-

at the outer entrance to Portland Harbor. The Saco River, which rises in the little lake in front of the Crawford House, and runs down between one end of the beach and Biddeford Pool. At this point are wharves, yachts and row-boats for all who wish for exercise or pleasure upon the water.

Old Orchard proper is a city of Hotels and Cottages. For those unfortunates who never do work enough to get tired, and who only want a place to kill time and plenty of people to help them to do it; who want the hurly burly of a fashionable watering place; for such Old Orchard offers every facility. In the season, it not unfrequently holds as many as six thousand people. But for those who have earned the right to rest, and who, by resting wish to lay in new stores of strength for new labor and who wish to do this in a choice company of pleasant people; for those Bay View is certainly the place.

The Bay View House is two miles from Old Orchard, in the direction of the mouth of the Saco River. A branch of the Boston and Maine Rail Road runs along the beach, stopping in front of the house every hour. The Hotel itself is less than two hundred feet from the water; and the restful beat of the surf, night and day soothes one like a lullaby, with a perpetual suggestion of a power that is *never weary*.

And here is not only the beach but the woods. The Hotel backs right into a Pine Grove, forming thus a combination of sea and forest so rare that I do not know its parallel anywhere.

The rooms are good; and the table first-class in every respect. There is none better on the beach. Bowling, billiards, and a fine new Music Hall, furnished with pianos and fitted for dancing, tempt those who wish to combine exercise with pleasure.

But now, in closing, it is only fair to say that in spite of all I have said, this is *not* the "Earthly Paradise" that is warranted to make *everybody* contented and happy. I have noticed that *people make their own climate*; and this without much regard to sun or clouds. If people are reasonable and disposed to have a pleasant time, I know of no better place for them than this. But as for grumblers and those afflicted with chronic selfishness and discontent, I do not know of *any* place to recommend to them, I only hope they will not come here; at any rate until after I have left.

I understand that you have prophesied a "cold and wet" summer. I hope this is a slander. But, in time, I trust you may be led to reconsider. If *money* is any object to you, I think I could easily raise a large subscription, on condition that you promise to furnish *this Hotel only* with the article of weather it desires. And this would surely be an easy task for one who undertakes to manage the weather of a whole continent.

Hoping you may arrive soon and try your hand on a summer that has so far been a *miserable climatic failure*.

I am

Sincerely Yours

M. J. SAVAGE.

"THE MONTHLY WEATHER REVIEW"

WASHINGTON, D.C.

The Review is a little magazine of twenty-one pages, edited and printed at the Signal office with such appliances as a rather meagre appropriation for the work allows. The publication giving facts and generalizations as the result of observations for the month of

MAY

is just out, and furnishes a complete and interesting history of the meteorological phenome-

nia of the month. The more prominent conditions noticed were deficiency in temperature, which was very marked, except in California. In New England the temperature for the month was five degrees below the mean and about the same in the Middle Atlantic States. In the Lake Region and the Ohio Valley the average was a degree below the mean and in the Northwest 7° below. A great excess of rainfall in the Ohio Valley, amounting to more than four-and-a-half inches, and in Tennessee and the Lower Lake Region amounting to nearly three inches, was a noticeable peculiarity of the month. The heaviest rainfall noted was in the vicinity of Little Rock, where it exceeded fifteen inches. The Review also contains new features under the head of Cotton Region Reports, instituted in April, for the special benefit of those interested in this staple. During the month there were five well-defined areas of high barometer, which pursued a general course to the south of east. Two of these were first noticed in the Northwest. The storm tracks of the month were generally to the north of those of the preceding month. There was a great deal of frost during May, ranging from New England to as far south as North Carolina and Tennessee. The heaviest frosts were reported from Iowa. Ice formed several times between the 1st and 26th of the month in Dakota, Illinois, Indiana, Iowa, Michigan, Minnesota, Nebraska and several other points north of the Ohio River. Snow was reported on high altitudes as far south as New Mexico, and at Washington, Iowa. On May 23 there was a fall from four to six inches. Terrific hail storms occurred on nearly every day of the month in various localities throughout the country, and sleet was reported several times in the States and Territories west of the Mississippi.

The winds of the month were high, and in the upper lake region, generally from the north. The greatest velocity reported during the month occurred on the 3rd, on the summit of Mt. Washington, where it reached a speed of one hundred miles an hour. The only place in the Northwest where a velocity of over fifty miles was reported was at Fort Benton, Montana, on the 12th of the month. Local rain storms were very numerous, accompanied by severe winds. There were no general tornadoes, although at Shreveport, La., Cherokee City, Kas., Petersburg, Va., Hot Springs, Ark., Warrenton, Mo., and Lakefield, Minn., the wind was of a sufficient violence to unroof houses, damage crops and property generally, and in some instances several persons were killed. No remarkable auroral displays were observed during the month. The water of the great rivers of the Mississippi Valley were far above their normal height during the month, and frequent high tides were reported along the Atlantic coast. On the 11th and 12th of the month the highest tides ever known occurred at New York causing great damages at the various watering places along the coast of New Jersey and Long Island. Solar and lunar halos were numerous, and mirage was reported four times at Indianola, Texas, seven times at Alexandria, Dakota, and once at Northfield, Minn. Observations of the characteristics of the sky at sunset, as indicative of fair or foul weather for the succeeding twenty-four hours, were made at all the stations, and in about eighty-six per cent. of the cases the expected weather followed. A very large and brilliant meteor was observed at Clinton, Iowa, on the 22d at 2.30 A.M., accompanied by two distinct detonations.

One earthquake was reported from Colorado. The report closes with notes of the occurrence of prairie and forest fires, the appearance or insects injurious to agriculture, and sandstorms, which were confined to South-west Nevada and Oregon.



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Bangor, Maine, U. S. A.

1874.

NINTH ANNUAL

1882.

Tri-State Picnic and Exhibition

OF THE

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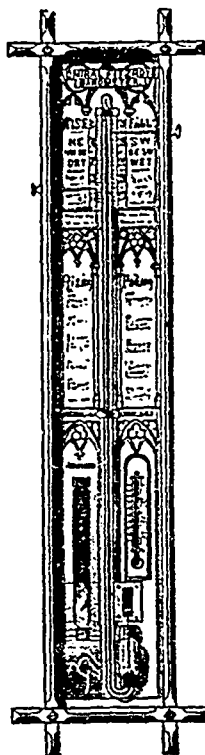
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