The Formation of Dew.

The formation of dew, one of nature's oft-recurring phenomenon, although an object of absorbing interest, has not elicited that thoughtful investigation by the casual observer to which it is entitled; indeed, to many its nocturnal origin is yet involved in mystery. In the economy of nature it is an important factor, from its benign influence upon the humidity and atmospheric temperature.

It is a well-established fact that the atmosphere derives its aqueous vapor from evaporation, and as evaporation is the result from heat, whereby the gaseous molecules of the atmosphere become distended, and their capacity for supporting vapor augmented, so must the quantity of vapor contained in the atmosphere be dependent upon the temperature of the air. When the atmosphere is saturated with vapor, by adding moisture, the elasticity of the vapor already present will not be increased, but will condense into minute drops and appear in the form of mist or dew.

The temperature at the moment of this conversion of vapor into dew is termed the dew point, by which we are enabled to determine the elasticity of vapor for each degree of temperature, and the quantity of vapor present at any time in the atmosphere evaporation commences at sunrise and continues until the diurnal temperature has attained its maximum between two and four o'clock in the afternoon. But with the increase of atmospheric temperature there is also an increased capacity for supporting vapor in a state of insensible suspension, consequently the air itself and objects surrounded by it feel comparatively dry from what they appeared to be in the morning, although the quantity of vapor has greatly increased.

As the sun recedes and loses in intensity her rays diffuse less heat upon the earth's surface, and a consequent reduction of the temperature begins and continues in three ways: First, by evaporation, which proceeds from the effect of surface heat and carries off caloric in a latent state; second, by an amount of surface heat being conducted downward into the earth; and third, by radiation which continues and becomes the most effectual agent of cooling.

In this way the decrease of temperature begins at the surface of the earth, and when diminished until the vapor of the lower temperature commences to saturate the air it becomes fresh and moist. This condition often occurs before sunset, and generally commences before that time in valleys and depressed locations, because the solar heat had ceased to act on them before its disappearance from the exposed table lands. As radiation is the principal cause of the reduction of the temperature, it progresses more rapidly from surfaces covered with grass, trees and undergrowth than from open, unobstructed surfaces.

Radiation proceeds more slowly from water surfaces, because when the superficial stratum imparts its heat to the rising vapor it sinks, and the one immediately below comes up to the surface.

As the decrease of temperature progresses more rapid from four to nine o'clock in the evening than during the remainder of the night, it is evident that a large proportion of vapor suspended in the heated air during the day is precipitated as evening dew, and frequently by ten o'clock the deposit on the foliage of trees becomes so copious that it may be heard falling in drops from leaf to leaf. Another period in which dew is copiously deposited is after midnight and at the dawn of day.

After nine o'clock the rate of decrease in atmospheric temperature is considerably diminished, and with it the formation of dew likewise retarded, but when the temperature has arrived at its minimum, the deposition of dew is augmented. The appearance of dew only in the morning proves that the temperature of the evening was not reduced to the temperature of the dew point.

But dew will not form on every evening, for the following reasons: First, when the sky is covered with clouds radiation from the earth is in a measure compensated by radiation from the clouds and, therefore, the surface stratum of air is not reduced to the temperature of the dew point; or a humid south or southwest wind may interpose the requisite reduction of temperature; another condition unfavorable to the formation of dew is that of a dry northwest wind, which may absorb the liberated vapor.

A hazy atmosphere or a large amount of invisible vapor will retard radiation, hence serene, cloudless nights, without deposition of dew, are regarded as indications of coming rain.

According to the theory of Professor Henry, the amount of the deposition of dew depends upon the stillness of the atmosphere, for if brisk winds are blowing at the time, the different strata of air will be mingled together, and that which rests upon the surface of the ground will be so quickly displaced as not to have time to cool down sufficiently to produce deposition.

Various ingenious methods have been devised to ascertain the hygrometric state of the atmosphere. The delicate hair hygrometer by Saussure, and that by De Luc made of the fiber of whalebone, have had their admirers, yet the results from their reductions are far from being satisfactory. The dry and wet bulb thermometers have superseded all other instruments for practical scientific purposes. The psychrometer is, at the present day, an indispensable adjunct to every meteorologist. The immersed wet bulb indicates the depression of temperature if the air is not already saturated with moisture, whereby evaporation is prevented; the rate of evaporation and the consequent depression of the wet bulb will be greater in proportion, as the air is farther from the point of saturation.

With the aid of valuable tables published by the Smithsonian Institution and United States Signal Office, calculations in hygrometry are greatly facilitated. With the difference of the two thermometers, by consulting the proper columns of those tables we can find at a glance the tension of vapor exerted on the mercurial column, the relative humidity and the temperature of the dew point.—*Prof. Boerner, in Indianapolis Journal.*

—Many farmers injure their farm implements more by exposure to the weather than by use on the farm. An implement which with good care would last twenty years, will, when exposed to the weather, become useless in five years or even less.

Webster and His Brother.

A hundred years ago, on the 18th of January last, Daniel Webster first saw the light of heaven on his father's farm among the hills of Salisbury, N. H. The centennial of his birth has been celebrated on the very day of his advent to the world, in the East and in the West, in the North and in the South; and now, just thirty years since he was buried by the sea on a beautiful October day, the public commemoration of his birth has taken place at his home at Marshfield, that he loved so well; and in Boston, another home, where the people so long delighted to do him honor.

There was one event in the life of Webster, most interesting and yet very sad, that we have not seen described. It was the great statesman at the funeral and the grave of his well-beloved brother, Ezekiel Webster.

The brothers were the children of Judge Ebenezer Webster—their mother being his second wife, whose maiden name was Abigail Eastman, a woman of uncommon intellect and force of character.

It will be remembered that Daniel was the younger brother, and that being a boy of delicate constitution, he was destined to Dartmouth College; while Ezekiel, the stronger son, was to aid his father upon the farm.

But in order that the younger should be educated, the farm must be mortgaged, which so affected the boy as his father carried him to Dartmouth that in his own words, "he laid his head upon his shoulder and wept."

Stimulated by Daniel's example and attainments, Ezekiel desired a public education; and Daniel loved him well enough to teach school at the rate of six dollars a month, that he might aid him to attain it.

Ezekiel finally graduated at Dartmouth, studied law, as did his brother, and opened a law office in the town of Boscawen, N. H., where Daniel had practiced law before him.

In early life the boys were inseparable. They labored together on their father's farm by day, and slept together at night. To show his love for his brother, among other modes, he dedicated the first volume of his works thus:

"To my nieces Mrs. Alice Bridge Whipple and Mrs. Mary Ann Sanborn; many of the speeches contained in this volume were delivered and printed in the lifetime of your father, whose fraternal affection led him to speak of them with approbation. His death, which happened when he had only just passed the middle of life, left you without a father and me without a brother. I dedicate this volume to you, not only for the love I have for yourselves, but also as a tribute of affection to his memory, and from a desire that the name of my brother Ezekiel Webster may be associated with mine so long as anything written or spoken by me shall be regarded or read."

It was in the spring of 1829, that Daniel Webster was shocked to hear that this beloved brother had died instantly while making a plea in the Court House in Concord, N. H.

The writer, then a boy, born and living in Concord, heard of the same sad event, which caused much lamentation in the town, throughout the State and country, for Ezekiel Webster was a great lawyer and a distinguished citizen.

The funeral occurred soon after in the Congregational Church in Boscawen, a neighboring town and the place of his residence. Daniel Webster, then a Senator in Congress from Massachusetts, who, during the following year, delivered his great speech in reply to Mr. Hayne, of South Carolina, came all the way from Washington to pay his last tribute of love to his brother.

Boy as I was, I went seven miles from the farm of my father to attend those solemn funeral rites. The large church, with its galleries, was filled to overflowing. All Boscawen was there; many came from the bordering towns of Concord, Canterbury, Warner and Salisbury and from distant towns.

I joined the boys in the western gallery, listened to the fervent prayers of the then venerable and reverend Dr. Wood, who was the last teacher of Daniel Webster before he entered college, and who had been his pastor.

As usual on such occasions in that day Dr. Wood preached a sermon, but with a voice somewhat impaired. He often repeated the phrase, "the enjoyments and employments of Heaven," which is nearly all I remember of the discourse, being surrounded by boys not very quiet and looking upon the great Daniel for the first time.

If ever Mr. Webster was a handsome man it was at that time. He was at the age of forty-seven years, or just in middle life, and had about reached the height of his fame. His face was sad under his great affliction, as it often was in the Senate at Washington, when the Union, that he so loved and so often defended, was threatened by sectional strife.

The service ended in the church, the loved form of his brother was borne to the village "God's acre" hard by, where the great statesman looked upon that face, called the most beautiful in New Hampshire, for the last time. He stood, he gazed, he wept! There was a moral lesson in the scene for all, especially for every mother and every brother.—*Youth's Companion.*

Thought Himself a Woman.

A queer creature died recently in the almshouse in Philadelphia, who for twenty-eight years was afflicted with a mild form of insanity. His chief delusion was that he was a beautiful young woman, and that numberless suitors knelt at his feet to sue for his love. The name of the old man was John Talboy Binns; but because of his idiosyncrasy, he was nicknamed "Sally Binns." When a young man he was a member of an amateur dramatic society, and he often played female parts with acceptance. He was a very polished and cultivated gentleman then, and had a taste for painting, drawing, embroidery and other feminine arts. After he became crazy, he made considerable money by making lace and working slippers for visitors to the asylum. Although nearly seventy years of age when he died, to the very last he imagined himself a pretty young girl.—*Demorest's Monthly.*

—A New Jersey Judge has decided that it is not a threat to tell a man that you will walk around on his collar-bone. It is merely a preamble to a roll in the mud and no one hurt

—In New York recently, Recorder Smyth sentenced two young fellows who went into a Chinese laundry and terrorized the inmates with pistols, to fifteen years' imprisonment at hard labor.

A Half Dollar Trial.

Mr. Ernest King, editor of the Fall River (Mass.) *Sun*, thus discourses upon the merits of St. Jacobs Oil: "Suffering with rheumatic pains I was Didymus as to remedies. I read of St. Jacobs Oil and said here goes for a half dollar trial. I bought a bottle and before it was half used the screw-wrench pains had gone and troubled me no longer."

THERE won't be any need of searching for the North Pole for the next four months.

COL. C. W. HERRERS, of the Forest Park Restaurant, St. Louis, Mo., was entirely cured of rheumatism by St. Jacobs Oil, says the St. Louis *Post-Dispatch.*

TOM B. has a young brother and a young lady sister, and Tom B. is a mighty hard one to keep up with. His sister had a beau the other night, and just as the conversation became interesting the little brother walked in. "Well," said his sister, "what do you want here?" "I want to whisper something to you," was the reply. "'Tisn't polite to whisper in company; speak right out like a little man." "But I don't like to." "Yes, but you must, so Mr. — can see how bright you are." "All right, then. Brother Tom told me to ask you what was the date of your last bustle, for he can't find to-day's paper high nor low, and he left it in your room just before supper." Tom left on the midnight train for a trip South, and his house is not expecting him back before the 1st of May. The young lady may recover by that time.—*The Drummer.*

Almost Persuaded.

It is not to be wondered at that chronic dyspeptics are peevish, cross and nervous. The disease poisons the blood, weakens the kidneys and shatters the nervous system. To those who feel almost persuaded to try that never failing cure for dyspepsia and general weakness known as Dr. Saynetts Yellow Dock and Sarsaparilla, we desire to say you make a great mistake by delaying. Now is the time. It will positively restore you to health, strength and vigor. It is the prescription of an eminent physician and is composed of Yellow Dock, Sarsaparilla, Juniper, Iron, Buchu, Celery and Colisaya.

A MISSOURI woman, after completing a lecture recently, passed the trail on which she was to be carried to another town. With her daughter she tried to get through on the freight train, but was informed that no passengers could be taken. She then demanded to be shipped as live stock, and as there was no rule against this, she and her daughter were weighed, ticketed and billed to a consignee as cattle.

Swindlers Abroad.

If any one has represented that we are in any way interested in any bogus bitters or stuff with the word "Hops" in their name, cheating honest folks, or that we will pay any of their bills or debts, they are frauds and swindlers, and the victims should punish them. We deal in and pay only the bills for the genuine Hop Bitters, the purest and best medicine on earth.

HOP BITTERS MANUFACTURING CO.

FLATTERY, like sugar plums, is very sweet, but not remarkably nourishing.

Why Will You Suffer?

Sick headache, nervous headache, neuralgia, nervousness, paralysis, dyspepsia, sleeplessness and brain diseases, positively cured by Dr. C. W. Benson's Celery and Chamomile Pills. They contain no opium, quinine, or other harmful drug. Sold by druggists. Price 50 cts. per box, $1 for two, $2.50 for six, postage free. Dr. C. W. Benson, Baltimore, Md.

THE Mobile (Ala.) *Register* claims that what Mobile has lost in cotton she is fast making up in other branches of trade.

How to Cure the Piles.

Edouard Reintard, of New York, writes to a friend: It gives me great pleasure to say that a single box of HENRY'S CARBOLIC SALVE effected a complete cure of Piles with which I had been troubled for over a year, and which nothing else that I used would cure.

IT doesn't do to engage in a dispute with a chemist, for he always has a retort ready.—*Rockland Courier-Gazette.*

Personal!

THE VOLTAIC BELT CO., Marshall, Mich., will send Dr. Dye's Celebrated Electro-Voltaic Belts and Electric Appliances on trial for thirty days to men (young or old) who are afflicted with nervous debility, lost vitality and kindred troubles, guaranteeing speedy and complete restoration of health and manly vigor. Address as above. N. B.—No risk is incurred, as thirty day's trial is allowed.

AUTUMN leaves, somebody has found out, are symbolical of misfortune. As they are a reminder of the melancholy days, "the saddest of the year," gay and giddy girls are advised to leave them severely alone.

Poverty and Distress.

That poverty which produces the greatest distress is not of the purse but of the blood. Deprived of its richness it becomes scant and watery, a condition termed *anemia* in medical writings. Given this condition, and scrofulous swellings and sores, general and nervous debility, loss of flesh and appetite, weak lungs, throat disease, spitting of blood and consumption, are among the common results. If you are a sufferer from thin, poor blood employ Dr. Pierce's "Golden Medical Discovery," which enriches the blood and cures these grave affections. Is more nutritive than cod liver oil, and is harmless in any condition of the system, yet powerful to cure. By druggists.

SOME one has discovered that Mrs. Langtry was born in the year ——, and is therefore —— old. We supposed she was much older.—*Norristown Herald.*

DR. PIERCE'S "Pleasant Purgative Pellets" are sugar-coated and inclosed in glass bottles, their virtues being thereby preserved unimpaired for any length of time, in any climate, so that they are always fresh and reliable. No cheap wooden or pasteboard boxes. By druggists.

A COUNTRY editor has been made the victim of a diamond robbery. His opponent stole the ace of that suit out of the pack.—*Boston Post.*

AS A TONIC and nervine for debilitated women nothing surpasses Dr. Pierce's "Favorite Prescription." By druggists.

THE latest conundrum exchanged between variety actors in New York is: "What's the difference between New York and Brooklyn?" The joocee reply is: "Two cents or swim."

"Example is better than precept." It is well known that dyspepsia, bilious attacks, headache and many other ills can only be cured by removing their cause. Kidney-Wort has been proved to be the most effectual remedy for these, and for habitual costiveness, which so afflicts millions of the American people.

WHEN Mrs. Fogg saw the man at the circus riding four horses abreast she thought it must be quite painful. "It is," replied Fogg; "in fact a genuine case of widespread distress."

For five cents, Wells, Richardson & Co. Burlington, Vt., will send colored samples of all colors of Diamond Dyes, with directions.

THE rapidity with which the coin, drilled by thieves, went out of sight as soon as the government refused to accept it, was a caution.

Lydia E. Pinkham's Vegetable Compound strengthens the stomach and kidneys and aids digestion.

"WHY should not women whistle?" They do. A good many of them when they want a new bonnet have to whistle for it.—*Philadelphia News.*

WOULD not be without Redding's Ribbon Salve, is the verdict of all who use it. Price 25c.

WELLS' 'ROUGH ON CORNS.' 15c. Ask for it. Complete, permanent cure. Corns, warts, bunions.

EARTH has nothing softer than a woman's heart, unless, perhaps, it is a tomato in the prime of life.—*Lowell Citizen.*

STINGING irritation, inflammation, all Kidney Complaints, cured by "Buchupaiba." $1.

ONLY one man out of nineteen forgets to pay postage on a letter, but on the other hand, one woman out of every eleven makes a blunder in the directions.

FOR AN IRRITATED THROAT, COUGH, OR COLD, "*Brown's Bronchial Troches*" are offered with the fullest confidence in their efficacy. *Sold only in boxes at 25 cts. a box.*

YOU will be a good deal older than you are now when you discover one woman adoring another for her beauty.—*Boston Globe.*

STRAIGHTEN old boots and shoes with Lyon's Patent Heel Stiffeners, and wear them again.

IF afflicted with Sore Eyes, use Dr. Isaac Thompson's Eye Water. Druggists sell it. 25c.

Hale's Honey of Horehound and Tar Stop the most violent explosions of coughing. Pike's Toothache drops cure in one minute.

ALL our lady friends will be glad to hear that Cragin & Co., 1188 4th st, Phila., send first-class piano sheet music, vocal and instrumental, gratis. (No advertising on it.) Write for catalogue.

Try the new brand, "Spring Tobacco."

HOSTETTER'S STOMACH BITTERS

Remember that examine, vital energy, the life-principle, or whatever you may choose to call the resistant power which battles against the causes of disease and death, is the grand safeguard of health. It is the garrison of the human fortress, and when it weakens, the true policy is to throw in reinforcements. In other words, when such an emergency occurs, commence a course of the Bitters. For sale by Druggists and Dealers, to whom apply for our Almanac.

$75 A WEEK in your own town. Terms and $5 outfit free. Address H. Hallett & Co., Portland, Me.

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