# THE ADVERTISER.

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OFFICIAL PAPER OF THE COUNTY


## *DAISIES.*

She was a little Irish maid,
With light brown hair and eyes of gray,
And she had left her native shore,
And journeyed miles and miles away
Across the ocean, to the land
Where waves the banner of the free,
And on her face a shadow lay,
For sick at heart for home was she.

When from the city's dust and heat,
And ceaseless noise, they took her where
The birds were singing in the trees,
And flower fragrance filled the air,
And there their leaf-crowned heads upraised
To greet the pretty gray-eyed lass,
A million blossoms starred the road,
And grew among the waving grass.

"Why, here are daisies!" glad she cried,
And with hands clasped sank on her knees.
"Now God be praised, who east and west
Scatters such lovely things as these!
Around my mother's cabin door
In dear old Ireland they grow,
With hearts of gold, and slender leaves
As white as newly-fallen snow."

Then up she sprang with smiling lips,
Though on her cheek there lay a tear:
"This land's not half so strange," she said,
"Since I have found the daisies here."
—*Margaret Eytinge, in Harper's Weekly.*

## THE NATURE OF COMETS.

**Prof. Benjamin Pierce's Theory—Full Brothers of Planets and Meteors—The Guesses of Aristotle and Seneca—The Electrified Train—Tailless Comets—How They Are Weighed—Their Orbits—The Nebular Hypothesis.**

In the Lowell lectures of the late Prof. Benjamin Pierce, of Harvard College, published in book form under the title of "Ideality in the Physical Sciences," is a chapter treating of the nature of comets, from which the following extracts are made as being of special interest at the present time:

The final stage of the nebular history is the congealed star, of which planet, satellite, comet and meteor are special forms, and which is destined to become again, at last, a chaotic mass. They are simultaneous in existence, and not belonging to successive stages of the history. Starting from a common origin, they have passed through a process of differentiation, and are fitted for different functions. They may all be regarded as bolides; and they fill the celestial spaces with every conceivable variety of magnitude, motion and physical aspect.

The comet, from the strangeness of its appearance in the inaccessible firmament, has been the immemorial wonder and dread of mankind. It has been the beard or tail of some invisible monster. It has been the sword of some angry god. It has been the pen of the furies, writing in the book of fate the death of Kings, the fall of empires, the speedy coming of famines and pestilences and destructive wars. It has been a light which has filled the souls of philosophers with darkness. Even the great Aristotle, with his clear belief in nature and his contempt for superstition, could propose no theory which was not a tissue of gratuitous and inconsequent hypotheses. He thought the comet, with its regular motions, to be a phenomenon like the flitting and uncertain *ignis fatuus*, an exhalation from the earth.

Nevertheless, even in cometology, where modern progress has been so essentially aided by the discovery of gravitation and the invention of the telescope, the instinct of the ancient thinkers achieved some memorable results. Passing by the researches of the Pythagoreans, we need only refer to the writings of Seneca in the first century of the Christian era. "I know," writes Seneca, "no nobler research, nor a more useful science, than that which undertakes the study of the stars; but to perfect this science is it not expedient to examine whether the nature of comets differs from that of the other celestial bodies? If we reflect on their motions, on their vicissitudes of rising and setting, on their light and brilliancy, we shall be struck with the analogy which we perceive between them and these other bodies. We need an exact history of the comets which have hitherto appeared; for it is their rarity of appearance which prevents our deciding upon the regularity of their movement. We are ignorant whether, describing fixed orbits, they do not reappear at periodic and determinate intervals of time." This was the prediction of thoughtful genius. Modern astronomy, profiting by the ancient suggestion, has demonstrated this, like many other truths. The dwarf of to day who stands on the shoulders of the giant of yesterday can see a greater distance than the giant.

The perfect comet combines nucleus and train. The beauty belongs to the train, which is unsubstantial and temporary; while the mass and density reside in the almost invisible but permanent nucleus. The solid nucleus moves about the sun in a nearly parabolic orbit, obedient to the same law of attraction which governs the motions of any one of the planets: whereas each particle of the train moves in its own hyperbolic orbit, in consequence of a repulsion from the sun often two or three times as great as the ordinary solar attraction. These particles of the train are electrified bodies, and have the same electricity as that of the sun; the particles which are most highly electrified advance to the front edge of the tail, while those that are the least electrified fall back to the rear. Some of the particles are electrified just enough to balance the solar gravitation; so that, after separating from the nucleus, they become neutral to the sun's action and move uniformly in straight lines, but without ceasing to be part of the tail. The particles which are less highly electrified remain attracted by the sun, but move in hyperbolic orbits—in the opposite branch of the hyperbola, however, to that in which the repelled particles move.

This theory, in an imperfect state, was rudely applied by Bessel to the tail of Halley's comet, in 1835. But the comet discovered by Donati, in 1858, offered as fine an opportunity as can be desired for its full verification. How grand was the beauty of that comet! All the world stopped in the street, when it became visible after twilight, and wondered at it with bated breath. A few centuries ago it would have caused universal dismay, and men would have paled at the frightful portent. But the Christian of to-day beholds it as the loveliest messenger of divine wisdom. A multitude of observations were made upon the train as well as the head, in all civilized countries, and the theory of the train was sustained in every detail. The elegance of the shape strictly conformed to the ideal constructions of the geometer.

If the nucleus of a comet were taken away, the train would continue to move off through space, undisturbed by the loss of its head. Singular as this phenomenon may seem, it has been actually observed. At midday on the 28th of February, 1843, groups of people in many of the towns of New England, especially at Portland, collected at the corners of the streets, gazing up toward the sun. Protecting their eyes in the shadows of the houses, they saw a brilliant object a few degrees from the sun. Such a marvelous spectacle had never before been beheld. A few days later a wonderfully brilliant tail of a comet was seen skirting the horizon soon after sunset, and reaching more than one-third of the way round the sky. What we now saw was tail without head, as we had before seen head almost destitute of tail. But head and tail were members of the same comet.

In about two hours the comet of 1843 went round the sun, from one side to the other. What could have become of the tail, which was reaching out about a hundred millions of miles from the sun as far as to the earth's orbit? There have been those who have actually adopted the incredible—I may say the impossible—hypothesis that the tail rotated through this immense circuit, developing a centrifugal force which all the united powers of the universe could not have sustained. But no! The comet practically left its tail behind it, and began to grow a new tail as it receded from the sun. There were thus two tails, nearly side by side stretching from opposite sides of the sun in nearly the same direction. The new tail began at the head of the comet; whereas the old deserted tail began without any head at some distance from the nucleus, and extended further from the sun than the new tail.

The nucleus of the comet is surrounded by a mist, which is called the *coma*, or hair; the name comet signifying a hairy star. The height of the coma above the nucleus depends on the mass of the nucleus, and gives the measure of its weight; or, more exactly, the least limit of weight which will suffice to maintain such a height of atmosphere. The nucleus is usually so closely surrounded by the dense mist that its diameter cannot be measured; but at times the mist rises, uncovers the nucleus, and leaves it with a sharp stellar aspect. The least diameter determined at such times may be larger than the actual one, but cannot be smaller. From the combination of mass and diameter, the density of the nucleus can be computed. In the case of Donati's comet, the diameter of the nucleus was perhaps not more than a hundred miles, while the height of the atmosphere extended to eighteen thousand miles. You may be surprised to learn that the corresponding density of the nucleus was at least equal to that of iron. What an unexpected contrast is here presented to the prevalent notions concerning the sun and the comets! The solid sun is reduced by science to the state of gas, while the substance of the ethereal comet is a solid and heavy metal.

In its approach to the sun, the surface of the nucleus is rapidly heated; it is melted and vaporized and subjected to frequent explosions; the vapor rises in its atmosphere with a well defined upper surface, which is known to observers as an envelope. Various envelopes, including each other, are often observed.

The electrification of the cometary mist is analogous to that of our own thundercloud. Any portion of the coma which has received the opposite kind of electricity to the sun and to the repelled tail will be attracted. This gives a simple explanation of the negative tails which have been sometimes seen, directed toward the sun. In cases of violent explosion, the whole nucleus might be broken to pieces, and the coma dashed around so as to give varieties of tail, and even multiple tails.

The relations of the comets to the solar system present an interesting and instructive study. With very few exceptions, their visible paths are so nearly parabolic, and the positions of their nuclei and centers of gravity so uncertain in the midst of their comæ, that it is quite out of the question to obtain nice enough data to measure exactly the extent of their orbits, and ascertain how great may be their deviations from exact parabolas, and whether the deviations are such as to make them ellipses or hyperbolas. If an orbit is actually parabolic or hyperbolic, and if there is no decrease in the central attractive force as the comet approaches the sun, it must have entered the solar system from outer space, and cannot be one of our permanent partners. It will leave the system again, and we may never expect its return; unless, indeed, having passed through the circuit of other suns, after myriads of years, it reappears in an orbit entirely different from its former one, so as to afford no evidence through which it may be recognized. But if it moves in an ellipse, and does not leave our system, it will return in a sensibly unchanged orbit, through which it may be detected."

The astronomer is often asked, upon the announcement of a comet, "Is it a new one?" and the tone of the inquiry usually implies a feeling of satisfaction in witnessing the discovery of a new star. But it is just the reverse with the astronomer himself. He ransacks the records, hoping against hope that he may enjoy the good fortune of ascertaining that the new comet is an old one—old, at least, in the sense that it has been observed once before, but not twice. On its first reappearance a comet is certain to be loaded with the name of the geometric discoverer of its path. Its theory is computed; its future returns are rigidly predicted; its social position is definitely established, and it takes its place among the registered members of our constellation. But a comet may belong to our system, and yet go so far from the sun that the intervals between its periods of visibility may be as long as three hundred thousand centuries.

There are a few comets of which the nonparabolic character is evident at once. Their orbits are decidedly elliptical: their periods do not exceed a baker's dozen of years; and they are intimately related to the plants in their positions and direction of motion. Prof. Newton, of Yale College, has given a distinct and satifactory explanation of the mode in which these comets were probably diverted from their original parabolic paths by the action of the planet Jupiter. It was a royal sport, and the final character of the cometary orbit was the natural termination of the game. These comets must be excluded from our general discussion.

Omitting them, we find nothing in the position of the other orbits which indicates relation to the solar axis of rotation or to the planetary planes of revolution. They are as uniformly distributed as if they had entered our system indifferently from every direction, and without reference to the prevailing motion of the planets or to their mutual organization. They are simply the largest of an immense swarm of meteors which are floating all around us—a swarm of which by far the greater portion consists of bodies too small to be seen by the light thrown upon them from the sun; and this invisible portion greatly surpasses, in number and even in combined mass, all the visible components of our constellation.

Returning to the original round nebula, from which the solar system was formed, we must suppose that it has gone through changes which are represented in many of the nebulæ. A central spherical portion seems to have concentrated into the sun and planets, leaving an outer spherical envelope, which was much slower in the process of condensation, and finally became an envelope of bolides. The natural orbits of the bolides were nearly circular paths, of which the sun was at the center. The variety of directions of the planes of the orbits was so great that they constituted a nearly uniform system, constantly approaching each other, and by their mutual heat producing explosions. They were thus broken up into an increased number of smaller irregular masses, such as we are familiar with in the meteoric stones. Thus we find all the varieties that exist among the bodies of the solar system harmoniously explained. Would it not be stranger than any fiction—would it not violate all physical analogies—if this ideal hypothesis of the meteoric structure of our system, sustained by such a variety of observation, were not a close representation of its actual history?

—Mr. H. J. Barron, Secretary of the Swimming Association of Great Britain, writes to the London *Times* to urge the necessity of children being taught to swim "a good, straightforward breast stroke." In case a person falls into a heavy sea, a side stroke should be adopted, presenting the back of the hand to the dash of the waves. If, he says, a child is taught merely to "tread water," no doubt after a few lessons he will support himself; but he will not be likely ever afterward to learn to swim with a good stroke. But if a child is taught the breast stroke properly, he will learn to support himself in fewer lessons, probably, and as he gains strength and confidence in succeeding years will practice and become efficient in a great variety of strokes.

—Crystallizing Grasses.—Dissolve in a quart of soft water all the alum you can by heating and stirring—it may be a pound, it may be twenty ounces. Have the grasses divided into small bunches tied. When the solution begins too cool dip in the grasses, holding them there five minutes, three minntes, two minutes or one minute, according to size of crystals you wish. The cooler the solution the quicker the crystals form. When too cold reheat. I have used a glass jar to dissolve the alum in, heating it in a kettle of water with an old plate at the bottom to prevent the jar breaking. One can see through glass the crystals forming and so know when to take the grass out. Do not let the grass touch the sides of the jar.

—The New Orleans *Times* is responsible for the statement that a mule was sun-struck in that city one day last weed.

—"Nothing is imposible to him who will." Nonsense; it is impossible for the man who wills to get ahead of the lawyers.

—A Dutchman repeated the adage, "Birds mit one fedder goes mit demselves."

## The Woes of a Landlady.

"This feller bit me on the hand," said Bijah, as he brought out a man thirty years old, who answered to the name of Longfellow Smith.

"Well, I don't allow any living man to take me by the neck!" retorted the prisoner.

"Your case is bad enough without any biting," observed the Court. "The witness will come forward."

It was a woman about fifty years old. Her brow showed lines of care, and her voice betrayed despondency.

"I keep a boarding-house," she began. "Last winter this man came and secured a room and board. He told me that he expected a legacy of $20,000 in July, and so I trusted him until he now owes me over eighty dollars. The other day I found out that he had been deceiving me, and that he was getting ready to light out. He won't get no more legacy than you or me."

"I think I know my gait," remarked the prisoner.

"Do you expect a legacy?" asked the Court.

"Yes, sir."

"Who from?"

"My aunt."

"Who is your aunt?"

"No matter. I expect a legacy, and when I get it I shall pay what I owe."

"I found out he was going to jump my bill," resumed the woman, "and I asked him for the amount. At that he got mad and kicked over chairs and swore like a pirate and threw my big Bible at the head of the cook. If I hadn't called in the police he would have killed some of us."

"Bosh!" growled Smith. "Here's the whole case. This womon wants a husband."

"Oh! lands! oh! lands!" she gasped.

"I owe her about twenty dollars, and she never said a word about it until she heard I was engaged to the second girl. She raised a row to scare me."

"Oh! heavens! heavens! heavens!"

"She wanted me for a husband, and even asked me to marry her. When I refused she got mad and pulled my hair, and that's how the row came about!"

"Oh! Judge, can you believe it,—do you believe it—will you believe it? Just think of me asking a man to marry me!"

"Prisoner, this is a serious case."

"It isn't as serious as if I had married her."

"You seem to be a hardened villain, and I shall have to send you up."

"Yes, send him up for life!" she sobbed.

"For sixty days."

"That fits me," smiled Smith, as he backed into the corridor to wait for the Maria.

"Well?" queried His Honor, as the woman fidgeted before the desk.

"I was going to ask you, sir, if it wouldn't be—that is, if it wouldn't be—if I hadn't better—!"

"Pay his fine?"

"That's it, sir. He seems to be a good man at heart, and perhaps—"

"Perhaps you'd better go home! He prefers the Work House to your society, and you might as well save your money."

She gave him a look of concentrated red lightning and backed into the crowd, and as he hunted for the warrant in the next case he whispered to Bijah:

"Old man, let this be a warning to you. The size of your feet has thus far protected you, but that may not always be a defense. A sharp widow can work all around a steel trap and beat the man who set it."—*Detroit Free Press.*

## Rich Pennsylvanians.

A reporter said to ex-Governor Curtin, of Pennsylvania: "Which estate will net the most to the heirs—that of Colonel Thomas A. Scott or the estate of Asa Packer?" He replied:

"I think that the Packer estate is the best. It is generally held to be worth $7,000,000, without exaggeration. The estate of Colonel Scott is large, but I think the newspapers rate it too high. I should put it down at about $5,000,000. Considering everything, that is a very great result for such an active and venturesome mind as Colonel Scott's. Some of the largest fortunes in Philadelphia have been accumulated by the manufacturers. There is Mr. Weightman, of the firm of drug manufacturers which monopolized the quinine. He is one of the richest men in Pennsylvania. The estate of Gillighan Fell is very large. Disston, the saw manufacturer, has made a large amount of money. Dobson, the carpet manufacturer, has done a great business. The Baldwin Locomotive Works, as you know, are the largest in the world. Sellers, the boiler-maker, is another great force with us. In Pittsburgh the largest fortune I presume to be that of William Thaw, who is at the head of the Pennsylvania Railroad lines west of Pennsylvania. He is now a Director in the Pennsylvania railroad. Some reckon his means at $10,000,000. Hostetter, the bitters man, is also very rich in Pittsburgh. One of the most successful men in our State is A. J. Cassatt, Vice-President of the Pennsylvania Railroad. He was a boy of plain, respectable family in Pittsburgh. He entered the railway service near the bottom and has worked his way up until he is one of the great masters of railroad details, and by his address is considerable of a public and social man; and his sagacity has made him a large fortune."

—Mean folks in this world? There are! A South End father asked his son if he felt too tired or lame to go to Barnum's circus, and when the boy said "no," told him to go and bring up a hod of coal. And the boy couldn't say he wasn't able.—*Boston Post.*

## PERSONAL AND LITERARY.

—Mr. James Russell Lowell is said to be collecting materials for a memoir of Hawthorne.

—Miss Nellie Hutchinson is chief editor of the New York Sunday *Tribune*. Miss Nancy Hay assists her.

—Messrs. Gilbert and Sullivan have written another comic opera, whose title is reported to be "The Princess."

—Dore is described as finishing, in deep meditation and with a sad face, a great picture called the Vale of Tears. It represents sorrow-laden crowds of men and women of all races and all creeds and conditions wending their way to the Light of the World, a figure of sunbeams.

—Edwin Booth writes—referring to his London engagement with Irving: "Its success is very great in all respects, and only my domestic misery prevents it from being the happiest theatrical experience I have ever had. I wish I could do as much for Henry Irving in America as he has done here for me."

—The portrait of Tennyson just painted by Millais represents the poet standing; he wears his old cloak, with its velvet collar and frayed button-holes, and holds "in the one brawny hand that is visible," an old black felt hat. His long hair and beard gives his head a singularly high and remote look. The large, soft eyes shine clear of the curiously developed upper lids and are full of thought.

—The French Academy is at loggerheads over a fund of 10,000 francs bequeathed by Mme. Botta, an American lady, of which the interest is to be awarded at stated times as a prize for the best treatise on the "Condition of Woman." The time for making the first award of this prize has now arrived, but Alexander Dumas and Emile Olliver got into a heated discussion over the question to whom it ought to be given. Dumas favors Leon Richer, a woman's rights advocate, for his book, entitled "La Femme Libre," but Olliver is bitterly opposed to the woman's rights movement. The Academy adjourned without coming to any conclusion.

## HUMOROUS.

—Is the jelly fish made from ocean currents?

—It takes eight hundred full-blown roses to make a tablespoonful of perfume, while ten cents' worth of cooked onions will scent a whole neighborhood. —*Detroit Free Press.*

—There is a great deal of religion in this world that is like a life-preserver—only put on at the moment of immediate danger, and then put on half the time hind side before.—*Josh Billings.*

—A dry-goods clerk, who had a most outlandish way of walking, had to go to a distant part of the store to find some goods which a party of feminine customers desired to see. "Walk this way, ladies," he called, as he swung himself off. "But we can't walk that way," cried a pert miss; "we never learned that style, you know." The clerk is now drilling his tibia in the motions of a new gait.—*New Haven Journal.*

—Class in arithmetic—"What is exchange?" Pupil—"No robbery." Teacher—"What is a vulgar fraction?" Pupil—"A naughty fraction." Teacher—"What is subtraction?" Pupil—"Hooking cherries." Teacher—"What is addition?" Pupil—"Hooking some more next day." Teacher—"What is multiplication?" Pupil—"Repeated additions." Teacher—"What is division?" Pupil—"Going snacks with the other fellers."—*Boston Transcript.*

—A pale-looking man went to an Austin doctor for advice. The doctor examined all the man's symptoms, and then asked him if he slept sound at nights. "No, I never sleep a wink of nights. I never shut an eye before daylight." "Ah," said the doctor, "that comes from nervousness caused by using too much tobacco." "No, it's not that. I don't sleep at nights, because I am a night watchman, and don't get out of bed until late in the afternoon."—*Texas Siftings.*

## Didn't Recognize Him.

The Boston *Sunday Budget* tells the following story: Many years ago there dwelt in a certain Boston street two families which, although near neighbors, had no neighborly relations nor even acquaintance. This grew out of the fact that while the head of one house—let us call him Jones—was of somewhat "low condition," the other, whom we will style Pedigree, was "upper crust, a regular patrician." It rather troubled the Jones family to have the Pedigrees treat them as though they did not exist; but they managed to worry along, and in due time the Jones boys grew to be men and entered upon the serious business of life, one of them to such good purpose that he acquired wealth and became the President of a bank. One day one of the Pedigree's received a check on this same bank and stepped in to have it cashed. The Teller was all politeness, said he had no doubt it was all right, but added that the rules of the bank required that the presenter of a check should be identified. Mr. Pedigree found no fault, and added that he had no doubt Mr. Jones, the President of the bank, could furnish the needed identification. Just then the President happened to pass from his private room, and the Teller handed him the check and stated what was wanted. The President took the check, examined the signature and the indorsement carefully, and, looking Mr. Pedigree straight in the face, handed it back to the Teller and said, "I do not know the gentleman," turned on his heel and went about his business.