

THE TAIL OF A COMET.

Traveling as comets do in very elongated ellipses, with the sun in one of the foci, as the attracting point is called, most of their journey is spent in slow uneventfulness far away from the hearth of the system—earth is just what the word focus means. They are then small globular aggregations, sluggish and dim—a little roundish nebula in look. Such they appear when first described in the telescope coming in from space, for they are rarely seen at all until they have entered within the orbit of Mars. Distance in part, but still more their own behavior till then, keeps them hid.

Within this nebosity, known as the head, appears as it nears us a bright spot, the nucleus. Suddenly there occurs a complete change in the deportment of the body, one which renders it the observed of all observers, and in less civilized times occasionally its being held the harbinger of distress, disease and death.

As soon as the comet gets near enough the heat of the sun sets up commotion within it. By Ver's determination of the temperature of the unblanketed sunward side of the moon we are enabled to infer that this heat is great at the earth's distance from the sun in spite of the cold of space. This temperature is 353 degrees F.

And as the comet approaches the sun this heat must increase inversely as the square of the distance. At half the radius of the earth orbit it is already four times as great above absolute zero, at a quarter sixteen times, and so on increasingly, the temperature rising into thousands of degrees.

No wonder the comet acts as it does. It at once becomes uneasy, waxes in light and, as the spectroscope reveals, disruptive electric discharges start in it which let out the imprisoned gases. Then begins that spectacular career of perilous passage which makes the comet so superb an object and for which it pays so dear. The gases which are thus thrust out from the interior of the separate meteorites, together with such particles of the iron as are made gaseous by the heat, fall prey to another force besides gravitation. This force is the impact of light itself, the light emitted by the sun.

That so luminous a thing as a beam of light can have power to move even a pith ball is a conception not easy to grasp. Yet there is no doubt of the fact, theoretically calculated years ago by Clerk Maxwell from his electro-magnetic theory of light, for the gaseous particles proceed to be repelled by the sun at enormous speed, each behaving exactly as it should by mathematical analysis if such were the occasional cause. Evidently the light waves have a propelling power in the direction of their own motion equal to their own speed.

Why, then, is it that the planets betray no such effect in spite of their size? The answer is, because of that very size. Gravity acts on the mass, a matter of three dimensions; the light force on the surface of the body, a matter of two. As a body diminishes in size, therefore, its surface bears a greater and greater ratio to its mass until when small enough the second force is the stronger of the two.

This relation is betrayed in the conduct of the tail. The imprisoned gases, heated to expansion on the sunward side of the comet, rise toward it in a series of exquisite mantling envelopes, as if the comet's head were veiling itself from the too ardent gaze of the sun. Then, after rising to a certain height, their initial impetus overcome, they fall back, repelled by the light waves, although still attracted by gravity, and are driven out to form the tail of the comet, fresh envelopes taking their place.

Sometimes only a single tail is formed, but at others two or even three are shot out, and when this happens one is nearly straight, one curved and one greatly bent. Now, calculation shows that the repelling force in the case of the first is fourteen times that of gravity, in the second two and two-tenths times, or something less, and in the third only about one-fifth of gravity. But these are the very ratios which particles of hydrogen gas, of the hydrocarbons and of iron or sodium would respectively show.

As the comet approaches the sun the display becomes more violent and more spectacular. Finer and wilder grows the pageant, the "hairy star" loosening its tresses, which had stood sedately coiled about its head amid the depths of space, to stream in gorgeous gleams behind it as it pays its orbital obeisance to the ruler of its course. It seemingly backs away in keeping with the etiquette of royalty, turning always its face sunward as it retreats whence it came.

But it pays dearly for its display. The matter going to form the tail can never be recovered, but is driven farther away. At each successive return to the sun some of its mass and brilliance is thus lost, and this is why the periodic comets, those that have made many visits, are such small and inconspicuous objects. It is only the comets of long ellipses and very distant habit of which the perihelion pageant is so fine.—Youth's Companion.

Work Has Been Done. Howel—You can't make a monkey out of me. Powell—No; you seem to have already awarded the contract.—New York Press.

With man, most of his misfortunes are occasioned by man.—Pliny.

Noah's Anchors.

A story of a pair of anchors is told in the book entitled "To Kairwan the Holy."

Kairwan is the Mecca of the west. It is a city so sacred that women are allowed to move about in it but very little. One of the interesting sights is the Mosque of Emir Ben Said Ben Mupptah. This mosque, with its six meion shaped domes, is the tomb of a most amusing old Moslem who died about the middle of the last century. He had great power over the bey and managed affairs according to his own pleasure. This Moslem got possession in Tunis of four large anchors which probably belonged to some old sea-merchant abandoned on account of stress of weather. The gentleman with the long name was not content with any such prosaic explanation of their origin. By means of the labor of 500 Arabs he had the anchors dragged from Tunis and deposited in front of his house. The transportation took five months. He then declared them to be the anchors by which Noah fastened the ark to Mount Ararat. The relics are now in the mosque of their former owner and are regarded as holy.

His Rules of Golf.

A lawyer of considerable prominence took up the game of golf. Some of his friends volunteered chapters of advice, while another presented to the beginner a book of rules. After completing his first round the counselor was asked if he had mastered the rules. The per-pirating lawyer realized the sarcasm of the remark, but proved equal to the occasion. "The rules? Oh, they are quite simple," he replied. "There are two I know of, and to my mind they are the most important. You must hit the ball with your club, and after you have hit it you must find it, of course, before you hit it again. It will take an honest man several weeks to master these two rules. After driving the ball you must hit it wherever it lies. Good lies are as important in golf as in fishing. Losing a ball costs you two strokes and the price of the ball. Hitting a caddy with the ball is justifiable homicide."—New York Tribune.

Butler's Reply.

There was a time, while Lyman Trumbull was chairman of the senate committee on judiciary, that Benjamin Butler was chairman of the judiciary committee of the house. It was at this period that a delegation from one of the southern states visited Washington with a desire to secure the impeachment and removal of the federal judge of their state. They interviewed Mr. Butler as to the probability of carrying such a measure through that session.

"I don't know," was Mr. Butler's reply. "I am chairman of the judiciary committee of the house. The necessary action can be had here. But Lyman Trumbull is chairman of the senate committee, and Judge Trumbull is troubled with two things—the dyspepsia, which makes him miserable, and conscience, which makes him uncertain."

Ginseng's Growth.

The manner of the ginseng's growth gives it a queer shape and in some cases fabulous value. There is first a main root or trunk. Then on the sides there will be smaller roots, one on a side, and by a curious formation the offshoots resemble arms and legs, so that the root grown ginseng looks for the world like a human figure. The more the fancied likeness to the human form is developed the greater the value, according to some of the Chinese. The root as an herb has wonderful properties, but, too, so much beyond the value of one that looks human. The others will cure cancers and all sorts of other diseases, but the precious one having the human shape will keep off devils and all bad luck.—Argonaut.

Not His Fault.

A story is told of a well known Sheffield tenor who when asked to sing at a dinner, although he had no music with him, went on to the platform to try.

He did his best, but he broke down in the middle and retired. He was cheered up by an elderly man sitting next to him, who tapped him on the shoulder and said: "Never mind, lad; that's done thy best, but 'teller at asked thee to sing out to be shot!"—London Telegraph.

Had to Do It.

Hogan—Phwat makes ye swally all your dinner in two minutes, Grogan? Are yez atin' on a bet? Grogan—It's for the good av me dyspepsy, Molke. Sure, the docther told me to rist an hour after 'atin', and how else av OI goin' to get the hour to rist in onless OI ate tolke the divil?—Boston Transcript.

The Higher Court.

"The courts have decided that a woman has no right to open her husband's mail." "My wife reversed that decision before it was made."—Houston Post.

Still Young.

Teacher—I am surprised that you are not further advanced. You are extremely backward for your age. Little Girl—Yes'm. Mamma wants to marry again.

A Medical Opinion.

"Doctor, how do you account for the existence of rheumatism?" "The mind, my dear sir, evolved the disease to fit the word."—Chicago Tribune.

The best rosebush, after all, is not that which has the fewest thorns, but that which bears the finest roses.—Henry Van Lyke.

THE BROKEN LEG.

The Widow Spicer lived on the outskirts of the village of Fowlerville, and next to her little farm on the west lived Joe Tillman, a bashful man.

One evening he found her sister there. It was an evening in summer, and he had it all planned out to ask the widow how her tomatoes were coming along—if the potato bugs had appeared in the garden, if the summer squashes had begun to get necks on them, and various other things—and then all of a sudden he would ask her to marry him. It must be sudden or not at all.

The bashful Joe had been planning this plan for a week, but it was all upset by finding the sister there. Such was his embarrassment that he asked Mrs. Spicer to lend him a hive of bees instead of a hammer, and he had hardly got into the house when he wanted to get out again. After he had taken his departure the elder widow said to the younger:

"Sarah, how long has this thing been going on?"

"What thing?" she replied, with a guilty blush. "This nonsense and waste of time. That fellow is in love with you, and a dog with one eye could see it."

"If he is he hasn't said so." "Then it's your fault. You are as red as paint, and you needn't deny that you think a lot of him. Don't try to deceive a woman who has had three husbands. What I want to know is why you haven't married him?"

"Because I'm not going to marry again." "Hoot-toot! Don't talk foolishness." "Well, then, Joe is a bashful man and hasn't asked me." "That's better. There are some men born that way. I shall make it my business to cure this old bach."

"Martha, if you interfere—" "I shall stay right here until he pops the question. No widow under forty has any business to be a widow over a year. If I wasn't fifty-two I'd be married within six months."

"You'd rope in a man the same as a calf, I suppose?" asked Mrs. Spicer sarcastically. "But I forbid you to meddle with my affairs. I like Joe Tillman, but even if he was to ask me to marry him I don't think I'd do it—that is, I can't say that I would."

"Oh, well, we'll see about it," said the elder sister, and there the conversation dropped.

In making his visits to the widow Joe did not come by the highway running past both houses. Instead of that he cut across lots and approached her house from the rear. He had two fences to climb, and he always sat on the last fence for a time to get his courage up. Sister Martha, without pretending to see anything, noted this thing and planned accordingly. She planned for a jar. She was a very practical woman, and one day when her sister had gone to the store she hunted up a handsaw, and, removing the top rail, she sawed it almost in two and replaced it. It was just at the spot where Joe climbed over. It might work, and it might not. She would take her chances on that.

That evening, as the sun went down and the gloaming came on and the birds twittered their last notes and the cicadas began rattling for prey, Joe Tillman might have been observed making a sneak across the fields. He hadn't visited the widow for three nights, being in terror of her sister. He had stood it as long as he could and was now coming to borrow her barn or smokehouse or front fence. The two widows sat on the veranda and waited. One waited to see if Joe would come, and the other waited for the jar that had been planned for.

Joe and the jar arrived together. If his heart hadn't been beating so tumultuously as he laid hands on that top rail he would have noticed something wrong, but as it was he climbed up and took his seat and had scarcely begun his hitching around when there was a crash and he went backward head over heels.

A crash was heard on the veranda, and both widows uttered exclamations and rose up. Both reasoned it out that it was Joe Tillman. Both ran for the fence. Yes, it was Joe. He lay in a heap on the far side of the fence, a leg doubled under him, and the women had to take down a lot of the rails to get over and at him. At

the first groan he gave they knew his leg was broken. At the second they ran for a mattress and carried him into the house. The hired man was hunted up in the barnyard and dispatched for a doctor, and long enough before midnight the broken limb had been set and the patient was doing well. Indeed, he was doing so well that the Widow Spicer came out of the spare bedroom with blushing cheeks and said to her sister:

"Martha, what do you think has happened?"

"Hasn't broken the other leg flourishing around, has he?"

"Joe has asked me to marry him!" "Hoot! But I had given him two weeks to make up his mind in."

"But what do you know about it?" "Why, I broke his leg. I made up my mind to break his leg or his neck to bring him to time, and now it won't be over six weeks before he can limp off to the preacher's with you and be married. Sarah, there is only one way to treat a bashful man who is in love with you—break his leg and make him talk."

And the Lost and Found Department and Scotland Yard.

"That lost and found property department at Scotland Yard is one of the best things they have in London," said a woman who has spent much time in England. "Last summer I had experience with it."

"I fell into a sort of habit of losing things. First it was a valuable umbrella. I did not miss it until I got to my hotel after an after theater supper. The next morning I made my husband take me to the theater and the two restaurants where we had been the night before, but without result."

"Then an American friend suggested Scotland Yard. I went there, and there it was. It had been turned in by a cab driver."

"Twice afterward I lost that umbrella and got it back in the same fashion, each time leaving as a reward for the cab driver a per cent of the value of the umbrella, as required. Then one night I lost a fine pair of opera glasses, and I got them back."

"It is an excellent system the police over there have of encouraging honesty. A cab driver who finds anything in his vehicle is required to turn it in, and he knows that if the owner claims it he will be rewarded."—Exchange.

An Old Welsh Custom.

The kindling of bonfires on hills is the simplest of celebrations at any time. The Druids made four great fires at their festivals in February, May, August and November. Wales seems to have been a country especially tenacious of this custom. Each family used to make its own fire, and as it was dying out each member would throw a white stone into it, the stones being marked for future identification. Then all said their prayers and went to bed, and in the morning they tried to find all the stones again. If any stone was missing it betekened that the owner of it would die within a year. Some superstitions are pretty and picturesque and attractive. This was one of the many which were cruel as well as picturesque. It would take but a slight accident to cause a fright that might be actually dangerous to a superstitious person, and it would not be hard for an enemy of such a person to cause that fright by stealing his stone from the fire.

Very Considerate.

A marriage advertisement is published in a Zurich paper by "a rich Swiss philosopher" who wants a wife who must fulfill the following conditions: She must be beautiful in body, face and mind and possess beautiful teeth and hair of her own and not bought articles. Besides German, she must have a knowledge of English and French, be a musician and have an irreproachable reputation. "Other faults," the philosopher of forty years states, "will be overlooked."

Appreciation.

"Father," said little Rollo, "was George Washington a greater man than Santa Claus?" "I won't say, my son, that he was greater, but he has proved much less expensive."—Washington Star.

Unanswered.

"Say, pop, may I ask you a question?" "Yes, Teddy. What is it?" "When a man's finished milkin' a cow, how does he turn off the milk?"

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