



Lightning Tubes.

At a recent meeting of the Geological Society in London Professor Ramsay and Mr. Eccles exhibited some "lightning tubes" found by them on the summit of the Riffelhorn, a sharp, rocky peak near the celebrated Matterhorn in Switzerland. The tubes were about one-tenth of an inch in diameter, and lined with a thin film of glass, black or dark brown in color, and formed by the melting of some of the constituents of the rock as the lightning penetrated it.

Peas and Clover.

A striking instance of the practical usefulness of a knowledge of entomology was cited in a paper read at a recent meeting of men of science in Philadelphia. Red clover was imported into a British colony from the mother country, but to the great disappointment of the farmers it did not thrive. Then the entomologists told the farmers what the matter was; they had neglected to import bumblebees with the clover. The bumblebee, with its long proboscis, was the only insect that could reach the honey in the red clover heads, and therefore the only one that would fertilize the flowers.

Saved by Antitoxin.

A report on the results of the use of antitoxin treatment of diphtheria in the hospitals of London during the year 1895 has recently been published. During the first ten months of 1894, previous to the introduction of antitoxin, 3,042 cases of diphtheria were treated in these hospitals, and 902 of the patients died, the death rate being 29.6 per cent. During 1895 3,259 cases were treated and 796 patients died, the death rate being reduced to 22.5 per cent. This reduction is ascribed to the new treatment, and antitoxin is accordingly credited with having saved 250 lives in London last year.

The Oldest Man.

The oldest man now living in the United States is said to be Alexander Freeman, an inmate of the Sailor's Snug Harbor on Staten Island. He was born Dec. 22, 1783, and will, accordingly, have lived 110 years next Christmas. Next in age to Freeman is William Haines, who fought under General Jackson at New Orleans. He lives in the St. Louis Memorial Home, and is said to be 107 years old. The age of Davis Parks, of Fowler, Mich., is given as 106 years, and Percy Dyer, of Belvidere, Ill., and Andrew F. McKee, of Burlington, Kan., are said to be each 104 years of age. All but one of these men are enrolled as veterans of the war of 1812.

Absorbing Heat.

An interesting instance of the application on a large scale, of the principle that black-colored substances readily absorb the heat of the sun, is mentioned by Mr. R. L. Fulton in Science. The toll-road from Truckee to Lake Tahoe, Cal., is closed early in winter by the immense snowfall, which in places buries the road to a depth of twenty or thirty feet. At the beginning of spring the owner of the line has black dirt scattered along on the surface of the snow, where he knows that his hidden road runs. The layer of dirt is not made so thick as completely to cut off the sunlight from the snow. The effect is described as wonderful. In a short time a long depression is formed in the snow, and "days before the ground is clear on either side the stages are running on bare ground."

Magnetic Photographs.

Prof. John S. McKay, of Brooklyn, describes in the Scientific American, a process of making, with the aid of a magnet, shadow photographs resembling those produced by the action of the X rays. Either an electro-magnet or a permanent magnet will answer the purpose. Place a key, or other iron or steel object, upon the sensitive film of an ordinary photographic plate; then bring the poles of the magnet near the other side of the plate and keep them there for five minutes or more. Upon developing the plate a shadow picture of the key, or other object, as sharp and well defined as any of the X ray pictures, will be found upon it. By this method only iron or steel, or other paramagnetic substances, can be photographed. But if the sensitive side of the plate is turned toward the magnetic poles, and a disk of iron nearly as large as the plate is placed on the other side, then shadow pictures of any non-magnetic objects, placed upon the sensitive film facing the magnet, may be obtained. The operations are, of course, conducted in a dark room. With an electro-magnet capable of lifting a weight of 700 pounds Professor McKay has made such pictures through two inches of watered wood. He has also obtained shadow pictures with a compound steel magnet weighing but little more than a pound.

Personal Appearance in Business.

As a well-known banker alighted from his carriage in Wall street the other day an old merchant turned to your correspondent and said: "I remember the time when a man's credit would have suffered if a business man came to his office in a carriage. In those days it was looked upon with sus-

pleion if he carried a cane, unless he was actually lame. A man would have had difficulty in arranging a loan at his banker's if he wore a mustache, as it was considered the appendage of a 'sport.' I well remember that when, as a young man, I began to cultivate the growth of hair on my upper lip, my employer gave me a friendly warning. Yet one could then go to business in what is now evening dress, and yet be considered as properly, though elegantly, attired. Now a man would be hooted at in the streets if he should wear his evening dress in the daytime. But times have changed greatly, or rather fashion has, for human nature is the same. After a long business career my deliberate judgment is that it pays to wear good clothes, fashionably made. I remember when as a boy I began my business career at \$3 a week. I was sent on an errand to the swell tailor's establishment of the city. After I had done my errand the tailor looked me over, and, noticing my country-made clothes, said to me that I ought to order a new suit. I explained to him my financial condition, when he said to me kindly, 'My boy, whatever it might cost, it would be the best business investment you could make. With fashionably cut garments on, your own confidence and self-esteem will be enhanced, and other people will think better of you.' And he generously offered to make me a suit and let me pay for it whenever I could, or not at all. He was right. It was as good an investment as I could have made, for I believe the habit it gave me of always wearing good clothes helped me immensely in my business career. I traded with that tailor for over thirty years."—New York correspondence of the Philadelphia Ledger.

RAILROADING IN OLD DAYS.

Conditions Have Changed Since the First Locomotives Were Built.

"Yes, I will admit that railroading now is not what it used to be in the '60s. We have had great changes and improvements in the past thirty years, and while it has all been for the best, still I often think that the life of a railway man is not nearly so pleasant now as it was in the olden times." The speaker was an old Pennsylvania railroad conductor, who has seen years of service, not only on the greatest road on earth, but on many other lines as well. When pressed for an explanation of the meaning of his opening remarks he began by making the statement that under "present systems of operating great trunk lines the men in charge of the trains have become mere automatons, following day by day the fixed, inexorable lines of law laid down in the book of rules. When a train starts out it is expected to run through to destination without any delay, and the work of each member of the crew is the same every day unless the clocklike rules of operation should be interfered with by a wreck. The engineer knows his duty and has his orders constantly before him, and he is guided along the way by the signal indications which are partly automatic and partly guided by human intelligence in the method of their indications. From beginning to end of the trip the predominant desire and expectation of the management as well as the crew is to get over the road on schedule time, which means that the wheels must be kept moving all the time, and only stopped at the right place, according to the unvarying requirements of the rules of the operating department.

CHAPTER XV.—(Continued.)

The next evening he discovered that he had to fill an engagement at the residence of the senior member of Rose and Company—the same senior member being popular in society, chiefly by reason of his handsome daughters, of which fact Annette was fully aware.

CHAPTER XVI.

Max Brett had indeed secured his prize, but was compelled to at once relinquish the pleasure of personal possession, for pressing business demanded his presence in the far West.

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Max produced the papers, and the red tape that was around them, and, to his utmost astonishment, found them to be twenty-two one-thousand-dollar bonds, registered in his name, besides a number of railroad stock certificates—the whole aggregating twenty-four thousand five hundred dollars! With them he found a letter signed "De Watts," which he commenced to read. But Silas interrupted: "Are they worth anything, Max?"

"Yes, Si, as you shall find out. You will be well cared for, Si, if there's gratitude in my nature."

"Thanks, my boy—you're very good—but—but—I guess it's too late for money—to—to—help me."

Even then the poor fellow was once more overtaken by one of his coughing spells, which left him terribly exhausted, and when Max returned to Gillicuddy's, about midnight, he carried word to the boys that old Si Bell was no more.

Except for the death of the faithful Silas, Max felt extremely gratified with the result of his visit to Rosedale. He was morally certain that De Watts had buried the bonds, and the letter which he had found wrapped up with them furnished him with valuable information and evidence to be used at some future occasion. He returned to Chicago, converted his bonds into cash, bought and furnished a pleasant home, and—

Well, by a strange coincidence, on a certain October day, when the New York papers announced a marriage that had taken place at Albany, the Chicago dailies contained a notice as follows:

"Married—At Grace Chapel, by the Rev. X. Y. Silver, Max Brett and Annette Spencer, both of this city."

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"Ah, you recognize me, Mr. Handford," said the man, as Handford grasped him warmly by the hand. "Then I shall doubtless receive the favor I am come to ask? I have a story to tell you. I am sick, very sick, although up till now I have been able to get around pretty well. The doctors now tell me I must cease working, and the next thing, I suppose, I shall have to cease breathing. Years of fast living in the old days and the sudden change to the hard outdoor life, have done their work. I once told you my name was Henry Richards. That is a name, however, which I assume to avoid recognition. My actual name is Spencer—Harry Spencer, reported dead in San Francisco a year ago. That report was circulated by some of my enemies for their own pecuniary benefit, and I have never thought it worth while to contradict it until now. Do not be alarmed, Mr. Handford. I am not a blackmailer, nor am I here for effect. Before I say any more, let me satisfy you that I am no impostor. Here is my watch chain. If you open it you will see Emily's picture and a strand of her hair. In this old pocketbook, too, is a copy of our marriage certificate—which I now destroy. Furthermore, in the package which I handed you some years ago, are all of Emily's letters to me, and a letter from me to her, which I wish her to read—some day.

"Now, Mr. Handford, I wish to repeat I am not here to reopen old sores or to create fresh mischief. I respect you, and bear you no malice. You are, I know, a brave man and, I think, a good man. You won't let me be dead. I am dead, socially, and wish to remain so. That brings me to the main object of this interview, with threats to produce me. Their scheme will be, of course, an attempt to blackmail you. Fear nothing; Emily and you will never again see me. We both love Emily, Mr. Handford; then let us swear that no word of my existence shall ever cause her a moment's uneasiness."

The two men shook hands, but the official's emotion prevented him from uttering a word. Spencer continued:

"I blame no one but myself for the past. I was a bad fellow the most of my life. I am down on the old pay-roll for the wages of sin. I still love Emily, but the best way in which I can prove that love is by keeping out of her way, which I shall surely do. Twice I journeyed to England just to catch a glimpse of her soul—well, I am glad she is married to a man who will care for her. I hope she will be happy; I trust you will both be very happy. To-day I shall leave the service of your company and head for Mexico. And now for the favor I would ask of you. You remember once promising to do me a favor? It is this. Tell her—prove to her—that I did not die the disgraceful death that was reported. Try to raise me a little in her estimation. It will not harm you, and the thought of your good word to come will help me out for the rest of my days. So, when I am dead, tell her, if you will, all that you know, and tell her, too, that I never ceased to regret how I justly forfeited her love, esteem and companionship."

There was a slight pause, which was broken by Spencer:

"Edward Handford, for Emily's sake you will promise all I have asked?"

"I promise—I swear it," said Handford.

As his hands unclasped Handford's mind wandered off as if to gather up the threads of the strange web of circumstances that had culminated in this interview. When he released his thoughts from their service, Spencer was gone.

When Spencer left the office of the railroad president, he descended to the street and was soon wending his way toward the depot, happier that he had lightened his mind of what had lately been a heavy burden. As he walked along the busy thoroughfare he suddenly felt a hand resting upon his shoulder, and before he had time to turn about, a familiar voice whispered in his ear—"Harry Spencer!"

He turned, startled and alarmed, and stood face to face with his old chum, Max Brett. For an instant the two men gazed at each other in surprise—Spencer because he had been recognized, Max on account of the sickly appearance of his friend. Spencer was the first to speak.

"Brett," said he, "under ordinary circumstances I should be glad to see you. As it is, I must confess I am sorry that we have met to-day. Many of my ac-

compliments, so let us move off to some more remote place, where we need not fear disturbance."

"Very good," replied Max. "We will get into a cab which will soon take us to my home, where more than one awaits your coming."

"Not to-day, not to-day," answered Spencer, as he endeavored to overcome his emotions. "Take me to a place where we shall be absolutely alone."

So they turned into the Palmer House, where Max secured a private parlor, and, when the door was closed, Brett said:

"Harry, I have secured at least half the world in a search for you, though in doing so I merely continued the good work which your sister, now that you have materialized, I think you owe it to all of us, not to mention yourself, to stay here and afford us the opportunity to set you on your feet."

"Yes, Brett, I know. I know that I owe so very much that it is folly to think of ever paying my debts. Listen. You know how I left my wife, in disgrace, before we had been married twenty-four hours. I was already estranged from her friends and some of my own relatives. In less than a day I lost Emily's good will and esteem. Then, for a time, I lost all personal pride, making bad worse, until I saw that all hope of a reconciliation was hopeless—gone. So I came West and went to work as a brakeman on the Great Occidental. Twice I saved enough money from my pay to take me over to England, but my father-in-law took good care that I should not gain access to my wife. Shortly after my second trip I managed to do a small favor for Mr. Handford, of the Great Occidental—though in making a friend of that gentleman I made a bitter enemy of one of the engineers. The railroad work proving a little too much for me, I located in Chicago and, as you know, secured a position with your firm. I left in the abrupt manner that you doubtless recognize, because I wished to evade recognition by my mother and sister. I returned to my old work on the railroad, at which I remained until to-day. I know everything of my wife's marriage to Handford and of your own pleasant relations with my sister. I am glad you are all happy—though I will not attempt to deny that I envy, oh, more than envy, you all the glad contentment of your lives. But I think I have buried some of the selfishness of bygone days, for I can heartily wish for all of you long and happy lives. And why should I belie that genuine wish of mine by bursting like a deadly bomb into these home groups? You know—Handford knows—the truth. Handford has pledged his word to secrecy; you do likewise, brother Max, and, as you love my sister and pity me, let the knowledge of my existence remain buried in the darkest recesses of your mind. I passed your home last night, and, if what I beheld through the uncurtained window gave me a sharp twinge of pain, it also filled my heart with much joy. There you were seated in your parlor with your wife by your side, while mother, snug in her own armchair, was sewing. Would it not be almost cruelly in me to throw the shadow of my disgrace upon such a home—to reopen old sores that are fast healing, or, by my rude presence, to upset and break asunder a union which is right and just, but which the knowledge of my existence would render illegal? No, Max, I think heaven that cruelty and wickedness are no longer a part and parcel of my life. No, I cannot, I will not stay. Good-by—remember I died in San Francisco. Good-by, brother Max, good-by."

With that, Spencer left the hotel and was soon lost in the busy throng upon the street. Brett returned to his office, and when he reached home that evening he found a letter from his uncle, John Satterthwaite.

(To be continued.)

A GRACEFUL TRIBUTE

By a Subject to His Sovereign, Queen Victoria.

The following graceful tribute is paid by Sir Edwin Arnold to Queen Victoria:

The heart of gold, the will of iron, the royal temper of steel, the pride, the patriotism and the deep piety of Victoria have been enshrined in a small but vigorous frame, the mignonette aspect of which especially strikes those who behold her for the first time in these, her "chair days." It was reported how, when Prince Albert was dying, he roused himself from a period of wandering to turn with ineffable love to his spouse and sovereign, saying to her with a kiss, "Good little wife!" And when the Prince Consort was actually passing away, after those twenty-one years of wedded happiness, it was told how the Queen bent over him and whispered, "It is your little wife" at which last words the angel of death stayed his hand, while once again the dear eyes opened and the dying lips smiled. But though this be so, no one who has been honored by near approach to her Majesty, or has ever tarried in her presence, will fail to testify, to the extreme majesty of her bearing, mingled always with the most perfect grace and gentleness. Her voice has, moreover, always been pleasant and musical to hear and is so now. The hand which holds sceptre of the seas is the softest that can be touched; the eyes, which have grown dim with labors of state for England, and with too frequent tears, are the kindest that can be seen.

Has Hanged Eighty-eight Men.

George Maledon, of Fort Smith, Ark., is the champion hangman of the country. For twenty years he has been the official executioner of the United States Court there, and during that time has executed eighty-eight men. Nearly all the criminals hanged by Maledon were desperadoes from the Indian Territory. Maledon is a small man, who speaks with a strong German accent. He has retired as a hangman and will work a farm in Kansas.

Found Out His Mistake.

An Atchison young man, who has imagined for years that the girls were trying to capture him, decided to get married recently, and discovered that no one would have him.—Atchison Globe.

If there is any one thing that prejudices us against a woman, it is to hear her swear.