

THE FIRST BALLOON.

Result of the Experiments of the Montgolfier Brothers.

Proceeding on the principle that heated air expands and so becomes lighter, bulk for bulk, than air at the ordinary temperature, the brothers Stephen and Joseph Montgolfier filled a paper bag with heated air, which rose to the ceiling of the room. This preliminary success was rapidly followed up, and they gradually increased the size of the balloons experimented with until they were so satisfied with their progress that in 1783 they gave a public exhibition, sending up a linen balloon 165 feet in circumference, which was inflated over a fire supplied with small bundles of chopped straw. The balloon succeeded beyond their utmost expectation, and after rising to a height of over 6,500 feet it descended ten minutes after in a field a mile and a half away. The next balloon carried a car, in which were a sheep, a cock and a duck.

The success of this further experiment induced M. Pilatre de Rozier and the Marquis d'Arlandes to risk their lives by making the first ascent in the new and wonderful machine. Their balloon, which was forty-five feet in diameter and seventy-five feet high and was inflated with hot air, passed over Paris to the great astonishment of the people, attaining an altitude of half a mile. Ballast was then for the first time employed in regulating the ascending power of the balloon. The first venture was followed by others, and De Rozier, the first to ascend, was also the first to meet his death in this manner, having been killed, with a companion, by the burning of his balloon near Boulogne.

BACKBONE.

The Self-Reliant Man Is the One Who Is in Demand.

Haven't you depended upon clothes, upon appearances, upon introductions, upon recommendations about long enough? Haven't you leaned about long enough on other things? Isn't it about time for you to call a halt, to tear off all masks, to discard everything you have been leaning on outside of yourself, and depend upon your own worth?

Haven't you been in doubt about yourself long enough? Haven't you had enough unfortunate experiences depending upon superficial, artificial, outside things to drive you home to the real power in yourself? Aren't you tired of leaning and borrowing and depending upon this thing and that thing which have failed you?

The man who learns to seek power within himself, who learns to rely upon himself, is never disappointed, but he always will be disappointed when he depends upon any outside help. There is one person in the world that will never fail you if you depend upon him and are honest with him, and that is yourself. It is the self-reliant man that is in demand everywhere.—O. S. Marden in Success Magazine.

Tobacco Smoke.

The composition of tobacco smoke is complex. Analysis gives nicotine, pyridic bases, formic aldehyde, ammonia, methylamine, pyrrol, sulphuretted hydrogen, prussic acid, butyric acid, carbonic acid, oxide of carbon, the steam of water, an etherized empyreumatic oil, and tarry or resinous products, among which we detect small quantities of phenol. Of all the products of tobacco the most venomous are nicotine, pyridic and methylamine bases, prussic acid, sulphuretted hydrogen, oxide of carbon and empyreumatic oil, and all that we draw into our lungs with more or less satisfaction.—Harper's Weekly.

Under the Rose.

The expression "under the rose," or sub rosa, to indicate secrecy, originates in the Greek mythological story that Cupid gave Harpocrates, the god of silence, a golden rose, desiring him at the same time not to betray the amour of Venus. According to another account, the traitors against the Greek states during the invasion of Xerxes held their meetings in an Athenian arbor formed of rose bushes. At Greek and Roman banquets the guests were always crowned with roses, and a cluster of these hung above the banquet table was a sign that what was said in that place should not be repeated elsewhere.

Decline of the Bath.

One strange feature in the advance of civilization has been the decline of the bath. Washing in the golden age of Greece and Rome was a fine art, and baths were built with as much care as temples. There has been a revival in this century of public baths, but from an aesthetic point of view they cannot compare with those of a barbarous age. This is not an age of washers.—London Lady.

Should Have Said Shoes.

"Miss Backbay," said Mr. O'Bull, who had been strolling along the country road with the lady from Boston, "I suppose your feet are very dusty. Permit me."

"Sir!" cried the precise young woman witheringly. "How dare you!"—Philadelphia Press.

Unreasonable Freddy.

Tommy—Ma, Freddy's crying 'cause 'm eating my cake and not give him any. Mother—Is his own cake finished? Tommy—Yes, ma; and he cried when I was eating that too.

A Traveler's Tip.

A guide to too often a man who tells you what you do not want to know in a language you do not understand.—New Orleans Times-Democrat.

Where life is more terrible than death it is then the truest valor to dare to live.—Browne.

LACE BARK TREES.

The Beautiful and Serviceable Dress Materials They Yield.

There are in all about half a dozen lace bark trees in the world, so called because the inner bark yields a natural lace in ready made sheet form, which can be made up in serviceable articles of apparel. Only four of these curious species of trees are of much practical value. Tourists who have stopped at Hawaii or Samoa may recall the lace bark clothing of the natives—clothing of a neat brown color when new, of remarkable strength and of a fragrant odor, like freshly cured tobacco leaf. The native tapa cloth, as it is called, is made from the bark of the *Brunonia papirifera*, but it is not usually included among the real lace bark trees. In its natural state the real lace bark is of a delicate cream white tint. It is probably a kind of fibrous pith. When the outer bark is removed it can be unfolded and unrolled in one seamless piece, having a surface of a little more than a square yard. Washing and sun bleaching give it a dazzling white appearance. The fabric is airy light. It is used in the West Indies for mantillas, cravats, collars, window curtains—in a word, for every purpose that ordinary lace is used. In making up shawls, veils and the like it is customary to piece two sheets of lace bark together. Delicate and apparently weak as it is in single mesh, a bit of lace bark if rolled into a thin string will all but resist human strength to break it.—New York World.

UNCONGENIAL FLOWERS.

Mignonette and Roses, For Instance, Will Not Mix.

The florist frowned as he took up an order for a table decoration. "That will never do," he muttered. After calling up the customer and suggesting a change, he told his new clerk a few things.

"You must never take an order that calls for a mixture of mignonette and roses," he said. "A centerpiece of those two flowers wouldn't last half through the luncheon. They simply wilt one another. I don't know why, but they can't get along together.

"It is true of many flowers. Pansies, for instance, last twice as long if they are not combined with any other flower, and the same may be said of violets, Jonquills and daffodils, on the other hand, seem to get a new lease of life if you combine considerable green with them. Carnations will go all to pieces if you combine them with roses, although the roses do not seem to be affected.

"It is more striking in combinations of green with flowers. If you try to use an entirely different type of foliage from what the flower is used to, it won't last so long. So I never put feathery foliage with lilies of the valley, for you know its natural foliage is a thick leaf. I never use thick leaves with carnations, for their foliage is of the feathery type. It isn't as though the flowers fought, but they seem to grieve at being misunderstood."—New York Press.

A Lure For Cock Robin.

Two crows clinked together give so good an imitation of the robin's metallic note that this device has long been employed in England to attract the welcome "harbinger of spring." Formerly male robins were snared by the clinking of two copper pennies near a dummy bird. The dummy was perched on a twig smeared with bird lime, and cock robin, attracted by the sound and suspecting a rival, flew at him with blood in his eye. This is in violation of the bird laws in the United States, and no one who lives where robins make their home in confidence is likely to give the odd trick so unpleasant a finale. The clinking coppers serve a much more agreeable purpose as a means of rendering cock robin sociable.

A Fortune in a Song.

Song writing is one of the most lucrative of occupations, provided one has the knack of appealing to the popular taste. The average writer stands a better chance of making money by producing pathetic rather than so-called "comic" songs. "The Lost Chord" has made three or four fortunes. It has been the most lasting success on record, and for years Sir Arthur Sullivan, as composer, and Madam Antoinette Sterling, for whom it was specially written, received a royalty amounting to 12 cents each on every copy sold. It was a gold mine to the publishers too.

Onion Soup and Fame.

Membership in the French academy, the hoped for reward of Gallic writers, was once closely associated with onion soup. During the restoration in France a club was formed under the title of "Diner de la Soupe a l'Onion." This organization contained twenty members. It met every three months, when the dinner was opened with an onion soup. The club was to endure until every associate was elected to the academy. This was accomplished in 1845, when the last banquet was held.

Pat's Escape.

An Irishman, meeting another, asked what had become of their old acquaintance, Patrick Murphy.

"Arrah, now, dear honey," said the other, "poor Pat was condemned to be hanged, but he saved his life by dying in prison."

She Would.

"I'm going up to interview your wife," said the society reporter. "Do you suppose she'll talk?"

"Do!" replied the husband. "Why, she'll be talking when your twenty-second edition comes out."

A Vacancy Filled.

Gerald—I have a cold in my head, Geraldine—Well, I suppose that is because you're snoring.—New York Press.

BLAZING METEORS.

The Short Lived Splendor of a Shooting Star.

A small body as large as a paving stone or not as large as a marble is moving round the sun. Just as a mighty planet revolves in an ellipse, so this small object will move round and round in an ellipse, with the sun in the focus. There are at the present moment inconceivable myriads of such meteors moving in this manner. They are too small and too distant for our telescopes, and we can never see them except under extraordinary circumstances.

At the time we see the meteor it traverses a distance of more than twenty miles a second. Such a velocity is almost impossible near the earth's surface. The resistance of the air would prevent it. Aloft in the emptiness of space there is no air to resist it.

In the course of its wanderings the body may come near the earth and within a few hundred miles of its surface, of course, begins to encounter the upper surface of the atmosphere with which the earth is inclosed. To a body moving with the appalling velocity of a meteor, a plunge into the atmosphere is usually fatal. Even though the upper layers of air are excessively attenuated, yet they suddenly check the velocity, almost as a rifle bullet would be checked when fired into water. As a meteor rushes through the atmosphere the friction of the air warms its surface; gradually it becomes red hot, then white hot and is finally driven off into the vapor with a brilliant light, while we on the earth, one or two hundred miles below, exclaim:

"Oh, look! There is a shooting star."

A FISH HOOK.

The One You Should Buy and the Test You Should Try.

The most common flaw is the temper of the hook. Some hooks are brittle and break easily. There are other hooks still that bend, and bend so easily that they "straighten" on every big fish, and yet other hooks that bend, but bend so hard that a big fish never flexes them, and they only straighten up, and come away when the full tension of the line is laid upon them if caught on a tough snag or tree bough. Those last are the hooks to buy—if you can find them—and the hard breaking hooks classify next in merit. Tests by the eye are quite useless, as so many hooks carry exactly the same flint in blue or black. Test the hook instead by the hand, catching the point in a firm bit of wood and trying it out both by the hand, firm pull and by the jerk. Watch particularly in this trial for weakness at the foot of the barb, where the wire is apt to be attenuated overmuch and the whole point give way on a strong fish, especially if hooked in bone or very hard gristle. What vasty depths of angling profanity, in spirit if not in word, have been stirred in boat and on bank when the pointless hook comes away from the hard played fish must be left to memory.—Outing Magazine.

Telling Time by Flowers.

"With a little time and labor it would be possible to construct a garden whose flowers would combine to make a first rate clock," said the botanist. "It is 5 a. m. when the sow thistle opens," he continued. "It is 5:30 when the dandelion opens. It is 7 when the white lily opens. It is 8 when the hawkweed opens. At 11:12 a. m. the sow thistle closes. At noon precisely the yellow goat's beard closes. At 2 p. m. the hawkweed closes. At 5 the white lily closes. The dandelion closes at 8 sharp. Since Pliny's time forty-six flowers have been known to open and shut with great punctuality at certain hours of the day and night."

Bills of Different Birds.

The bill of the canary is built for crushing seeds—has strength, but in many of the doves the bill is slender and weak. Many of the pigeons and doves that feed on seeds have gizzards that are large and muscular—crushing and grinding being accomplished in that way.

It is difficult to say how much birds experience taste, probably in a small degree. Ducks and parrots have soft, fleshy tongues, but in most birds much of the tongue is sheathed in horn. Food may be selected by intuition as to what is wholesome, more than by taste.—St. Nicholas.

Purity of Milk.

In Paris the municipal chemists accept milk as pure when it contains one ounce of butter and four ounces of solids per quart. At Bern milk must contain at least 3 per cent of butter and may contain 90 per cent of water. At Berlin the police seize all milk offered for sale which is below the legally required standard of 2.7 per cent of fatty matters. This allows the dairy-men to add with safety from 10 to 13 per cent of water to fairly rich milk.

Safer.

"Of course, I don't want to criticize, but I don't think it was altogether right for David to say 'all men are liars.'"

"Well, at any rate, it was safer than to pick out one man and say it to him."—Philadelphia Ledger.

An Old Clock.

The great clock at Rouen has been measuring time and striking the hours and quarters for over 500 years and, it is said, has been running all this time without interruption.

Modern Gallantry.

The Man (in the street car)—Take my seat, madam. The Woman—Thank you, but I also got out at the next corner.—Chicago News.

Calumny is the worst of evils. In it there are two who commit injustice and one who is injured.—Washington

MAKING PORCELAIN.

The Most Exciting and Romantic Trade in the World.

The maker of porcelain and pottery has decidedly the most exciting and romantic trade in the world.

The great factories of Sevres and Dresden were founded by Bernard Palissy. This man invented white enamel, but it took him sixteen years to make the invention—sixteen years of hunger, misery and persecution, which culminated in the episode, used in H. A. Jones' play of "The Middleman," wherein Palissy maintained his furnace fire by burning all the furniture in his house and finally opened the furnace door to find within the glaze which he had sought throughout the best years of his life.

Bottlinger invented hard porcelain. He was an alchemist, and one day, chancing to discover that his powdered wig was unusually heavy, he inquired the cause and found that the weight was due to the kaolin with which the wig was powdered. This kaolin was the substance for lack of which Bottlinger's investigations had for years failed.

When Elers opened a porcelain factory at Buxheim he employed none but the most stupid and illiterate workmen, so that his secret processes might not become known. But Samuel Aabury resolved to learn the Elers method and, affecting ignorance and stupidity, he got a place in the factory, mastered all of Elers' secrets and eventually opened a plant of his own, wherein he duplicated in every detail the work of Elers.—Exchange.

MANY, MANY DOCTORS.

A Sixteenth Century Wager That Might Be Won Today.

The story is told in Joubert's "Popular Errors Concerning Medicine," published at Bordeaux, France, in 1570. "But one Gouelle, a lester at the court of the Duke of Ferrara, insisted once upon a time that the trade which had the most followers was that of doctor. To prove his assertion he left his home one morning to go to the palace with his nightcap on and his jaws wrapped up. The first person he met stopped him with the question, 'What is the matter with you, Gouelle?' 'A terrible toothache,' 'Oh, is that all? I'll tell you what will cure it.' And every person he met had some advice to give him.

When the lester reached the duke's chamber, the same question and answer were repeated. 'Ah,' said the prince, 'I know of something that will take the pain right away.' Gouelle instantly threw up his kerchief, saying: 'And you, too, monseigneur, are a doctor? I have only passed through one street in coming from my house to you and have counted more than 200 of them. I believe I could find 100,000 in the city.' Whether the story is true or false, it could be told again in our days, and Gouelle would win his wager without dispute.

Queer Drummers.

"There's a story," said a drummer, "about a commercial traveler whose line was tunnels and post holes for fences. Him I never met. I did meet one, though, a drummer selling iron churches and suspension bridges. Another time I met a drummer who said his line was puppets. What did he mean by puppets? He meant, I found, glass eyes for stuffed animals, for dolls and for human beings. One of this man's favorite amusements was to open his sample case and ask the people to pick out the eye that best matched their own. The people made awful mistakes in this, for nobody, it seems, knows the color of his own eyes."—Cincinnati Enquirer.

What Father Does.

Mothers may talk, work, struggle to make their sons models by which to shape a new heaven and a new earth. But the boy's world is in the man who is his father, and the boy believes that whatever may be right on Sundays or at prayer times the things that are really good, that really count in life, are what father does. Moreover, it is what father does which defines the means with which the boy shall work, the sphere wherein his efforts shall be shaped. In a word, what father does is the beginning as it is the end of the boy's achievements.—Harper's Bazar.

Precocious Fox.

Charles James Fox is probably the only man who ever made a maiden speech in the commons while still a youth in his teens. He was nineteen when he took his seat for Midhurst, and within a few months he had made three excellent speeches. And yet even at this early age Fox used frequently to sit up all night drinking and gambling.

An Explanation Wanted.

"I'd like to know," began the thoughtful boarder.

"Would like to know what?" asked the boarder who knew it all.

"I'd like to know how 'matches are made in heaven' when they keep all the brimstone in the other place."—Chicago

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LIVING ON AN ACRE.

How It Would Help the Man of Family and Little Money.

A family, with a modest house surrounded by an acre of good soil, even where the work has to be performed by members of the family who are occupied during the long hours of the day at various occupations, will produce almost everything used in the family. An acre of ground thoroughly well cultivated, with a little chicken yard as an adjunct, will reduce in a very material way the expenses of the family.

Of course acre lots are impossible inside of the city limits or even very close to the city limits. The person seeking so large a lot must go to a considerable distance from the business center, but the extension of electric lines enables even working people to live at a considerable distance from their place of employment. A man who earns \$2.50 to twice that sum a day and who has a family consisting of a number of children often finds some difficulty in bringing them up properly and giving them the kind of an education he would wish. Such an investment as this, saving rent of say \$20 a month and yielding eggs and all kinds of vegetables as well as considerable of the fruit that goes to make up the daily ration of each member of the family, will make his struggle in life much lighter. A man who has such a stake in the country will be in every way a better citizen than the one who spends his week's earnings as soon as they come into his hand, if not a week before they are earned.

Varied occupation exceeds all other processes in drawing out whatever of ability a man possesses. Here lies the advantage to the community—one superior to all economic gain—of the suburban acre lot for the home of the city wage earner. The cultivation of that acre in alternation with his other employment will bring him intellectual and spiritual enlargement, while it gives him a healthier body and wholesome surroundings in which to bring up his family.—Maxwell's Tailor.

THE GROWTH OF TROUT.

Age, Food and Temperature Seem to Have No Bearing on Size.

The Salvelinus fontinalis, which is currently but inaccurately called brook trout, was supposed for many years to be a small fish. Agassiz was largely instrumental in exposing this fallacy. It is not an uncommon thing for an angler with ordinary luck to get a six or seven pound trout of this variety. It is known that a trout may grow to weigh eleven or twelve pounds. There is, however, great difficulty in accounting for its variation in size.

In northeastern Canada there are large streams and lakes in which only fingerlings have ever been found. In the immediate vicinity of such waters three and four pound trout are quite common and seven and eight pounders are not phenomenal. In all these waters crustacea do not abound; there are no small fish of any kind except small trout. All the fish are pure fly feeders. At some places, it is true, frogs abound, but taken as a whole the difference in food supply is not an adequate explanation for the difference in growth.

There is no substantial difference in the waters as to temperature, size, origin and course. Climatic conditions are the same. The small trout taken to virgin lakes in which there are no fish have sometimes grown to a great size, have sometimes remained small and sometimes have not thrived. The anglers who haunt these waters have not yet found a satisfactory explanation of this peculiar condition of things. It is one of the mysteries which lends fascination to the art. "You never can tell what is going to happen when you go fishing."—St. Paul Dispatch.

Long Words or Short?

Which shall we prefer in speech and writing? Almost everybody will vote for the short word, and almost everybody will be voting for the best candidate. The short words are usually the strong words. They make up in muscle and liveliness what they lack in size, says the Manchester Union. And they are readily in the eyes of men who have thoughts that they wish to lodge in other minds. A man who should run out into the street and yell "Confagration! Confagration! Confagration!" when his house was burning would be thought to be making a jest of the affair. And so in all matters where ideas are to be handed out quickly and clearly—the short word has first choice.

Cockfighting Among the Greeks.

The sport of cockfighting seems to have originated with Themistocles of Greece. When he was leading an army against the Persians he noted two cocks in a desperate battle. To stimulate the courage of his soldiers he pointed out the bravery of birds, and, having won his battle with the Persians, he ordered that an annual cockfight should be held to celebrate his victory. In England the records show that the first cockfight took place in 1191.

What He Meant.

"Don't forget to visit the mystery show while you are in Europe."
"Let's see, that's in one of the German cities, isn't it?"
"No, it's in Bern, Switzerland. I refer to the international sausage exhibition."—Cleveland Plain Dealer.

Danger in Soap.

A Philadelphia boy who was washing his face got soap in his eyes, fell off a step and broke his elbow. Small boys can show this to mamma.—Seattle Post-Intelligencer.

Ambition is pitiless; every merit that it cannot use is contemptible in its eyes.—Joubert.

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