

ART OF WEIGHING.

Wonderful Scales That Are Not Made of Anything.

THE LAW OF FALLING BODIES.

By This, Thanks to Newton and Leibnitz and the Calculus of Differentials, the Weight of Stars and Planets May Be Accurately Determined.

The art of weighing has expanded into a comprehensive science and can no longer be called a mere art. Scales are made of metal, but the art herein described is not made of anything. Scales are in hourly use that can weigh a pencil mark whose length is one-fourth of an inch, or a section of a hair of equal length. The usual practice in weighing runs from grains, ounces, pounds up to tons, usually one ton, and then up to fifty or more tons in railroad weighing, costing hundreds and thousands of dollars.

But humans would find it quite difficult to make scales that would weigh millions, billions, trillions, quadrillions, quintillions, sextillions, septillions, octillions and billions of tons, or billions of billions. An instrument able to weigh a billion tons can now be purchased for one cent—a pencil. The scales are not made of metal, instead a set and fixed specific speed is the next to all powerful engine used. But it is far more easy to run a locomotive or steamship without knowing a single law of these complex machines than to even attempt to use the speedometer without knowing every minute detail of every velocity law of moving bodies.

Let a street car start from rest and keep moving faster and faster until its rate of motion is, say, twenty miles per hour at the end of one minute. If the speed of the car increased uniformly during the entire minute its average speed is ten miles per hour, because it started from rest and increased to twenty miles per hour. If a body moves during one minute at twenty miles per hour the distance traveled will be speed multiplied by time, or twenty miles multiplied by one-sixtieth of an hour, or one-third of a mile; but the average speed in case of the car is ten miles per hour, so that the distance moved over is half as great or one-sixth mile. This is a fundamental law of nature and is of enormous importance.

Law: For uniformly increasing speed, starting from rest, the velocity increases with the time, but the distance traversed is that moved over by the moving body with its average speed, or one-half.

If measuring the distance fallen through by a body let fall at the rigidly exact beginning of one second of time to the rigidly exact end thereof is difficult, what shall be said of finding how fast it is falling at the end of the second. Go try: work from the apex of twenty to sixty yards daily and you will find. The fact is, the time required to find the mathematically exact specific speed of a falling body in still air was almost that required to measure the distance of the nearest star, about 120 years.

Then Atwood invented his machine, and this finally came to some near approach to accuracy. But this instrument of precision fell far short of the electrical chronographic apparatus. When all of this very complex mechanism is in perfect order it releases the ball at the exact beginning of a second and records the precise time on the cylinder of a chronograph electrically and, records the process at the absolute end of the second so far as human hands are able to do rigidly accurate work.

The moment that those supermen, Newton and Leibnitz, discovered that mighty power, beside which all else human pales into insignificance—the stupendous calculus or differentials—every mathematician saw immediately that one of nature's most magnificent laws was found in falling bodies. And then began the relentless and arduous self imposed work of more than a hundred years to find the set specific speed acquired by a falling body at the instantaneous and absolutely exact end of the first exactly measured second of time since man appeared.

The result is one grand, all potent, all powerful mean or average of a century of world wide measures, the diamond of diamonds, the most valuable number in possession of man, the astronomical balance:

Thirty and one-tenth feet fallen to end of the first second; 322 feet per second speed at end of first second.

That is, a body let fall will, under the action of the earth's attraction of gravitation, fall 16.1 feet during the first absolute second of time, and at the absolute end of the second will be in motion with a velocity of 32.2 feet per second. These numbers constitute the most accurate and all powerful scales in existence.—Edgar Lucien LaRke in New York American.

Turkish Postage Stamps. Every one who has collected stamps must have noticed the absence of sovereign heads from those of Turkey. This is due to the fact that Mohammedans think a representation of the human face or figure unlawful. Therefore Turkish stamps carry the crescent, which the Turks borrowed from the Byzantines after the fall of Constantinople. They also used a complicated, arbitrary sign, supposed to be the signature of the sultan.

Search thy own heart; what paineth thee, in others in thyself may be.—John G. Whittier.

MARRY TO BECOME WISE.

In Kansas Wives Are Looked Upon as Children Until They Wed.

The Kansas marry very young, generally between the ages of twelve and fifteen. For a woman to look twenty without marrying is considered a terrible thing. A peculiarity of these weddings is that they would appear to be a matter of interest to every student the parties mostly concerned, who often see one another for the first time on the wedding morning. This is because in a Kansas household the boys are kept apart from the girls, the father and the sons occupying the front of the house and the mother and daughters living in the rear of the establishment. However, in their social life the boys are not allowed to mix with the prettier sex.

The parents and friends arrange the match in accordance with their own interests, and if both parties agree and the bargain is concluded the formalities are of the simplest. There is no religious ceremony and no legal contract.

Early on the wedding morn the best man arrives to tie the bridegroom's gaiters in a knot on the top of his head. This act only remains because as an omen and certain sign of his condition, but signifies that he is to be treated as a man and enter public life. He may be a mere child, twelve years of age, but he has no longer any right to play with his big friends and must choose his associates among old men.

He has now all civil rights and is expected to behave accordingly. If, on the contrary, a man is unable to afford the luxury of a home and a wife, he may wear his gaiters down his back, has none of the advantages of citizenship and is expected to play with kids, marbles and such like. Any fellow who may commit an error in the same way as the thoughtlessness of a child who is not responsible for his actions.

The wedding ceremony itself is most simple. The whole function consists of a procession when the bride and bridegroom are conducted by their respective relations to a plain. There they are put face to face and, probably, as all eyes are turned, they are to be seen together for the first time. They merely glance at one another, then bow, and the knot is tied indissolubly.—Wide World Magazine.

Fingers and Forks.

A New Yorker was speaking of a London horse show he attended.

"A feature of the show," he said, "was the magnificent riding of certain Arab chiefs. These chiefs gave a dinner one evening, in Arab dress, and they ate the first course—kous kous—with their fingers.

"An Englishman asked for a fork for his kous kous. When it was brought to him a young chief said:

"I beg your pardon, but I don't see how you can bear to eat with a fork."

"I," the Englishman replied, "was about to remark that I didn't see how you could bear to eat with your fingers."

Japanese Festival Cars. Most Japanese towns have a shrine or temple dedicated to the tutelary deity of the city. At Ueno, in the Iga province, several beautiful decorated cars are kept at the shrine, and figure annually in a curious procession. When the day of the festival arrives hundreds of pious worshippers drag the cars by means of ropes through the gayly decorated streets of the city—thereby, they believe, greatly pleasing the gods of the shrine. The cars are wonderful examples of Japanese decorative art, richly ornamented with gilding and lacquer work.—Wide World.

How Do You Laugh?

A French paper has discovered that a person's character is expressed in his manner of laughing. If you laugh in "ho-ho" fashion you are frank if a man and insouciant and incapable of keeping a secret if a woman. If you laugh "he-he-he" you are neuroathetic, melancholy and skeptical. If you adopt a deeper tone and laugh in "ho-ho-ho" you are generous, easy going and good natured. The proper pitch for the fair sex to laugh in is "he-he-he," while people who laugh with a "ho-ho-ho" effect should be viewed as hypocritical, scandal mongering and miserly.

Marble Parisians.

Public exhibitions in Paris prove very profitable to the owners of houses commanding the scene. Windows are let out for the occasion, the landlords watching for the first sign of de-ecation and then at once sending word to the persons who have hired the room. If an ordinary criminal is executed the charge is usually about \$4 per seat, but should the offender have committed any remarkable crime the price runs up to as much as \$30.

Exaggerated Impressions.

"Mr. Neelton says his wife is competent to hold any office in the government."

"That opinion," replied Mrs. Cayenne, "is the result of his vanity. He thinks that because she can govern him she must be able to govern the entire nation."—Washington Star.

Flattery.

Flubhub—What do you consider the most delicate form of flattery? Cynabus—Telling a married man he doesn't look ill.—Judge.

Chance generally favors the prudent.—Joubert.

When Servants Were Fined.

What would servants of modern times say to the following rules and regulations that were adopted over 200 years ago in the household of Sir J. Harrington, the translator of Aristotle?

A servant absent from prayers to be fined twopenny; attending at such a service, leaving a door open, a penny; a penny fine for any beds unmade, for any one leaving up of the better's shoes, a shilling; twopenny fine for any one who has not laid the table for dinner by half past five or supper by six; any one being absent without leave, twopenny fine; a penny fine for any bed-room being left unmade; a fine of a penny for any "water's room left unmade for four hours after he or she has finished; a penny fine if the hall be not cleaned by 8 in winter and 7 in summer; a fine of twopenny if the stairs be not swept every Friday after dinner.

All these fines were deducted from the servants' quarterly payment of their wages.—London Standard.

Red Hair and Temper.

"All mankind," said Major Hignot, a well known English student of psychology, "may be divided into those who are red haired and those who are not red haired. It is a fundamental difference." In almost every case of a red haired child the mother has succeeded in discovering a red haired ancestor, and he thinks that practically the whole of the red haired population springs from a single red haired man for lack in the past. Here are some of his conclusions:

—In order for red to appear it must be in the ancestry on both sides.

—A red father and a dark mother, or vice versa, hardly ever have a red child.

—Two reds always have red offspring. But it is exceedingly rare to find two reds marry, as they seem to have a mutual antipathy.

—It is a popular fallacy that red haired persons have any distinctive temperament. They are no more hot tempered than other people.

A Story of Tallierand.

During the troublous days of the French revolution, when aristocratic heads were dropping in the basket in the name of liberty, fraternity and equality, Tallierand lived and prospered by virtue of a marvelous ability to tell just the psychological moment to jump off one hand wagon and aboard another.

The name of this French diplomat has been kept alive more than have those of most of his contemporaries by a vast number of anecdotes in which he figures. It was Tallierand whom Napoleon de Staal, honestly but brilliantly, tried to corner by asking him if she and the beautiful Mme. Recamier were to fall into the water, which one he would rescue. And Tallierand smiled in his most languishing manner and replied:

"Ah, madame, but you swim so well, you know?"

Wangen's Fountain of Wine.

A fountain of wine is one of those historical extravaganzas which are generally associated with the name of Nero, yet on every July 13 the public fountain of Wangen, in the Alsace wine country, flows with wine. In the middle ages the commune of Wangen was sentenced to make an annual payment to the monastery of Strasbourg of 100 measures of wine. In 1733 the payment was abolished by the Directory. Under Louis XVIII, two merchants asked the transfer of the payment to them, by means of forged documents, for 1500, but the commune commenced proceedings against them, in which it was victorious on July 13, 1830. Since that date a communal festival has been held on that day, and from the public fountain erected to commemorate the victory wine flows for one hour in the day.—Westminster Gazette.

No Complaint to Make.

It was at the rendezvous. The girl with the electricizing voice had just finished her song.

"Just think," groaned Brown to the stranger beside him. "We paid real money to hear that!"

"I didn't," was the placid response. "Come in on a romp."

"But you had to spend car fare to get here, did you not?" asked Brown.

"None," replied the uncomplaining one. "I live in walking distance."

"But," persisted Brown desperately, "at least you hoped to be entertained, not pushed."

"No, I didn't care," grinned the stranger. "I came to get away from home. My wife is cleaning house."—Judge.

Her Rule.

She was giving orders at express rate, for they were married, and he, as a rule the most meek and subservient of men, was like the proverbial worm, beginning to turn.

"Do you think," he inquired, "that you rule the whole of the universe?"

"No," she snapped, "but I rule the first letter of it."—London Answers.

Long and Heavy.

Deacon—How did you send your sermon?

Parson—By parcel post.

"But I thought there was a limit as to the length and weight of things you could send by parcel post?"—Yonkers Statesman.

Reminding Him.

Millyn—When I married your mother I was earning \$10 a week; two years later I brought out my register. I thought—And put in a copy register.—Yonkers Statesman.

Reverses of him who hates the laugh of a child.—Lavater.

Late at the Play.

We know from Pappas and from passages in the plays of contemporary dramatists that the manners of the ancients in the restoration epoch were not like ours, but there is no reason to believe that even the fine traditional manners of the theater have been entirely lost. Mr. Sewell and his followers would make ready while the play was going on to show the superiority of their wit to the poet's, but they likely were on hand early to see some of the fun. In later epochs of English dramatic history theater going was a serious undertaking, not a mere pastime. One can tell from the beginnings of old plays that the authors counted on audience closely attentive from the first. Lady Randolph is the first speaker in "Bohemia," Queen in "The Disappointed Mother," Alceida in "The Mourning Bride." The custom of "plugging the audience" with a short piece was of still later origin. Perhaps about the time the habit of going late to the theater became common. "Half price" for late comers was a custom of Thackeray's time.—Westminster Gazette.

Crackdown at Eight.

"Among the many people whose acquaintance I made in Richardson's room was old George Crackdown. I happened incidentally to remark that I wasn't very well, when Crackdown in his genial manner exclaimed: 'What? Not well? A powerful young fellow like you ought to be ashamed of yourself to talk of being unwell! Here, let me see you do this!'"

"He sprang up, took the tongue and poker from the fireplace, crossed them on the floor like two swords and then, whirling his own air, dashed a highland sword dance with great agility and accuracy, keeping it up for at least a quarter of an hour. As he threw himself into a chair, somewhat exhausted by his efforts, he said, 'Now, then, when I'm dead you can say you saw old Crackdown when he was over eighty years of age dance the sword dance in Dr. Richardson's room!'" —From "Pages from an Adventurous Life."

Punished the Selfish One.

The Bala-Gonova express, says the London Standard, Geneva correspondent, was overcrowded the other day and several travelers had to stand in the corridors of the second class coaches. One tourist saw a seat vacant, but covered with luggage, and asked a passenger sitting near whether the seat was "occupied." "Yes," replied the stranger, "the man is in the restaurant car, and will return soon."

There the matter ended until the express reached Lausanne, when the owner of all the luggage prepared to get out.

"Pardon me," said the tourist, "that luggage does not belong to you," and called the guard. The latter sided with the tourist, and the whole matter was placed before the station master. The selfish traveler had to prove, piece by piece, that the luggage on the seat belonged to him, and he finally was obliged to pay for two second class tickets.

The Charm She Wore.

Many are the charms adopted by society women with a grain of superstition in their makeup, and one of the most unique is that worn by a young matron who spends much of her time at Atlantic City. Attention being called to her curious pendant—a polished substance in set in pearls and suspended from a slender gold chain—she was asked what manner of stone it might be. "Stone?" she laughed. "It's just plain, ordinary wood. You see, I have a most unfortunate tendency to boast, and at such times caution tells me to look wood. Oftentimes there is no wood at hand, so all I have to do to save myself from any rashness is to tap my little locket. Simple, ain't it?"—New York Tribune.

Beautiful India.

India bears the same relation to the Orient that Italy does to Europe. It is the home of palaces, temples and monuments; it is the home of beautiful art work in many materials. Most of its cities have a splendid historical past that is seen in richly ornamented temples and shrines, in the tombs of its illustrious dead and in palaces that surpass in beauty of decoration anything which Europe can boast.—"The Critic in the Orient."

Setting Him Right.

They were enjoying a motor ride and had just entered a country road.

"May I kiss your hand?" he asked, a little confusedly.

She removed her veil.

"No," she replied. "I have my gloves on."—Lippincott's Magazine.

Teaching Him.

Briggs—Did your wife scold you when you went home so late last night?

Griggs—You don't know what it is to have a wife who was once a school teacher. Why, she made me write a hundred times on a slate. "I must be home by 10 o'clock."—Exchange.

Soothing.

"Then you refuse to eat my first biscuit?"

"I don't refuse to eat it, my dear. I don't want to eat it. I wish to have your monogram engraved on it and then bring it upon my watch chain."—Louisville Courier-Journal.

Defining It.

Instructor (at night school)—Give a sentence with the word "metaphysical" in it. Shabby Hated Pupil—On his way home Mr. Jones metaphysicals.—Chicago Tribune.

Confidence imparts a wonderful inspiration to its possessor.—John Milton.

Won Their Pardons.

From the time of the story of Damon and Pythias various reasons for temporary release from jail have been given. It is related that in the Napoleonic era a soldier confined in a military prison for a minor offense against the service during a brief time of peace was released in order that he might be present at the christening of his infant son, born during his imprisonment. But Napoleon, in order to test the intensity of the man's desire, made him agree to serve a year longer for the privilege of a three day furlough. The soldier gladly did it and when the required found a pardon and a corporal's warrant for his infant son, to be valid when the son had "served with credit six months in the emperor's army of the future." Frederick the Great released an audacious captain under sentence of death so that the captain might "tell him a few beneficial things about himself." The things told face to face influenced the great king to pardon the blunt death defying soldier.—New York Sun.

Teacher Found Them.

Henry Ward Beecher used to visit his old friends once a year for many years, but in the latter part of his life he was not able to do this. In his very last year, however, he was able to spend a day in Indianapolis and went round the place. That evening he was received by the ministers, and the chairman in welcoming him said:

"Doubtless you had few of your old friends here in Indianapolis after so many years of absence, but we who are here welcome you just as warmly."

Mr. Beecher in reply said:

"Your chairman has said that I have found few of my old friends here in the city. It is true, I found only Mr. —, Mr. — and Mr. — (naming four or five of the old men of the city). But this afternoon we drove out to Cedar Hill (the cemetery), and I found them. They are all there, sleeping just as peacefully as they used to do under my sermons."

Speed of Animals.

According to the naturalists, no animal is known to have exceeded the speed attained by the famous race horse Synoby. Instantaneous photographs show the full length of one complete stride of about twenty-six feet. In the stride of the fastest racers the hind quarters and limbs are raised considerably higher than the shoulders and from this relatively great height is brought downward and forward, widely separating from each other, as a sportsman says, "to avoid striking the fore legs." The hare which is hunted with fast dogs has not in reality the speed of the dog. The dog, on the other hand, does not attain the speed of the horse. The giraffe is said to run at the rate of fifteen yards per second under the most favorable conditions. The elephant, going at a rate of two yards a second, carries a weight approximating that carried by six horses.

Perpetual Silence.

A curious mourning custom obtains among central Australians, who, although representing perhaps the lowest and most degraded type of human beings, have managed to evolve a most complex system of rites and ceremonies which governs almost every action of their lives. When a husband dies the widow paints herself all over with white pigment and for the space of a year must not exhibit herself to a male member of the tribe on pain of death. For the rest of her life, unless she marries again, which is sometimes allowed, she must not speak, but communicate with the other women by means of a sign language, consisting of movements of the hands and fingers, which has been developed by these savages to a marvellous extent and by which their limited stock of ideas can be fully expressed.

Fancy Mice.

That the rearing of fancy mice can be made not merely an interesting hobby, but also a source of substantial profit, is illustrated by the experience of a Scarborough (England) man, hundreds of whose tiny pets find their way annually into the hands of the British aristocracy. Tame mice are required principally for use in submarines. They are exceedingly prone to suffocation. The Scarborough fancier, Mr. Beaudin, illustrated this by covering the palm of his hand with ordinary liquid paint and placing a tame mouse on it. The tiny creature was at once overcome by the smell of the paint and suffocated in an incredibly short time.

Byron's Habits.

While Byron was in Ravenna, Italy, he adopted strange habits. It was his custom to rise at 2 in the afternoon, breakfast and dine at 6. Then he would sit and talk until 5 or 6 in the morning, or, if no company were there, he would write a bit of "Don Juan." But his life was like that of Aubrey Beardsley—upside down—the day was the night.

In Training.

"Have you been to sea in the last six or eight years?"

"Not exactly," replied the mariner. "But I'm not out of practice. Every evening I go to the club and spend hours in a rocking chair whose motion has given many men seasickness."—Washington Star.

Eugenics.

The self made man was speaking. He said: "My father was a raiser of hogs. There was a large family of us." And then his voice was drowned by the applause.—Life.

We can do what we ought to do, and when we say we cannot, why, we simply will not.

Fat and Fashionable.

According to the Moorish idea of beauty, the chief charm of a beautiful woman is that she can only walk, not walk. The fatter she is the more beautiful she is considered. If she can dash two or three hundred pounds of flesh she is the envy of all her sex.

The Moorish shape—if shape it can be called—approaches the perfection of feminine beauty when it resembles, or rather exceeds, the circumference of a barrel.

What a paradise for the fat woman! There she can eat and drink and loaf to her heart's content, darning herself nothing, living an easy, indolent, luxurious life, with no horrid accumulation of fat, but rather rejecting it. There the ambition of a woman is to acquire bulk. Physical culture she would regard as an enemy to beauty, and to take Turkish baths and get herself would be considered the height of folly. She wants to be beautiful, and to be beautiful she must be fat.—St. Louis Globe Democrat.

Why Their Clothes Didn't Fit.

The late Admiral Robley D. Evans during his visit to Japan was received by Matsuhito and his empress at a court ceremony. In speaking of the Japanese court he said:

"Hand kissing was not the thing I intend, I received a handshake from a very shapely and beautiful lady. I found the empress a woman of great refinement and perfect ease of manner, so delicate in appearance and so small in stature as to remind you of some fine piece of Dresden china. She was attired in a Paris gown of heavy, tulle brocade, the had fit of which I accounted for just as I accounted for the baggy trousers of the emperor. After I had been a year in Japan I was satisfied it was owing to the fact that a tailor would not permit himself to touch the persons of their majesty, but just looked at them and passed what the measurements should be."

Long Lived Spaniards.

Though the average age of Spaniards is among the lowest in Europe, thirty-two years and four months, aged fifty years in Sweden and Norway, yet Spain remains the land of hundred-year-old people.

South of the Sierra Morena there are fifty to sixty hundred years old in every million inhabitants. In Malaga and other parts of Andalusia 100 hundred-year-olds are reckoned in every million inhabitants. And when a Spaniard once attains that age he usually hangs on to life for ten to fifteen years longer.

One of the famous long lived men of Spain was Dr. Manuel Barca, who died buried in the Church of San Sebastian at Seville, having 121 years to his credit, according to the church records. He left 300 descendants.—Boston Post.

The Palmetto State.

The origin of the state arms of South Carolina is thus given in the historian: "On June 28, 1776, a force of less than 100 Carolinians, under command of Moultrie, protected by the rude fortification of Sullivan's Island, in Charleston harbor, made of the trunks of the palmetto, repulsed the attack of a British fleet under command of Sir Peter Parker, and when the state of South Carolina was organized the state seal, which was first used in May, 1777, was made to commemorate this victory. A palm tree growing erect on the esplanade represents the strength of the fort, while at its base an oak tree, torn from the ground and deprived of its branches, recalls the British fleet built of oak timber, overcome by the palmetto."

Crocodile in a Tree.

An African hunter once found a large crocodile hanging in the fork of a tree about ten feet from the ground. As the place was fully half a mile from any water it was difficult to account for the crocodile's strange position. When questioned about the subject the natives explained that it was put there by an elephant. It occurred that when the elephants wade into the Lake Ngami to bathe the crocodiles are in the habit of worrying them and biting their legs. Sometimes when an elephant is annoyed beyond endurance it picks up its tusks, places it in its trunk, places it among the branches of a tree and leaves it there.—London Graphic.

His Claim to Fame.

"There goes one of the most famous men I know of."

"How so?"

"He was never on the Chattanooga platform, was never arrested for speeding his auto and never testified before a senate investigating committee."—Indianapolis Star.

Rebelling.

Wife—John, wake up! There's a burglar downstairs. Husband—Well, what of it? Ever since I got my eye insured you've been trying to put me to the front.—Milwaukee News.

Pleasing People.

Men often say by way of defense that it is impossible to please everybody. It is worse than that. It is impossible to please anybody.—Philadelphia Ledger.

Love and the Men.

Kitty—They say, you know, that love makes the world go round. Maybe so, but it cannot make the eligible young men go round.—Boston Transcript.

Mad Audience.

Ham—Gee, but our audience was mad last night! Let—Sore, eh? Ham—Now; we played at the insane asylum.—Stanford Chaparral.