

PERFECT SPHERES

With All His Scientific Skill Man Cannot Produce Them.

THE CURVING OF A BASEBALL.

It is Possible Only Because the Ball is an Imperfect Globe and in Comparison With Its Size Much Rougher Than the Surface of the Earth.

The real reason why a baseball can be thrown so that it will describe wonderful curves during its progress through the air is that every such ball has a surface made up of mountains, valleys, craters, canyons, gorges, plains and other irregularities of the surface that, when the difference in size is taken into consideration, makes the surface of the earth seem like plate glass.

If it were possible to make a perfect sphere—if it were possible to make a baseball with an absolutely smooth surface and an exact sphere—no pitcher in the world could make it curve. The very best pitchers baseball has ever known or probably ever will know could not make the ball deviate a hair's breadth in its flight.

And so while it is partly in the art or knack the professional pitcher has in holding and releasing the baseball as he throws it, it is also due to the fact that a baseball has a wonderfully rough surface against which the air catches and turns it that gives it the curve.

If you pass your hand over a plate glass it moves smoothly with nothing to retard it. If you pass your hand over an unplanned board you can feel the roughness—splinters we call them. You cannot move your hand as easily over the board. This is the same principle with the baseball. There is a roughness in its surface that catches in the air and forces one side about or retards that side. This has but one result—to make the baseball leave its straight course, and in doing this it describes a curve.

This does not detract in the least from the cleverness of the pitcher who can so accurately judge his muscular control as to make a baseball curve up or down, right or left. But the fact remains that it is the roughness of the baseball that makes all his pitching cleverness possible.

Take a brand new league ball in your hand. It looks to be a perfect sphere—that is, absolutely even and uniformly round and as "smooth as glass." And it may be as smooth as glass, for glass also has a rough surface.

Put a baseball under the most powerful microscope, enlarge it microscopically 10,000 diameters, and what do you see? The very thing mentioned in the first paragraph of this article. The surface is rough. It looks like the landscape in the Alps or Yellowstone park or any other rough section of the earth. It has peaks, ranges, ridges, valleys, plains and holes, gulches and all sorts of uneven places, and if the earth could be made as small as a baseball it would be practically a perfect sphere and absolutely smooth.

This is because the highest mountains of the earth and the deepest valleys would be millions upon millions of times smaller in comparison with the rough uneven places on a baseball if either the earth were reduced to the size of a baseball or a baseball enlarged to the size of the earth.

If this were not true the earth would not revolve so regularly upon its axis. It would perform an "in shoot" or "out shoot" and curve off through space.

Even the billiard ball has a surface much rougher in comparison to its size than the surface of the earth, and we refer to a billiard ball as about the smoothest thing known. "As smooth as a billiard ball" is a well known simile. For the same reason that a perfectly smooth baseball could not be curved, a perfectly smooth and perfectly round billiard ball could not be made to curve on the table. It would not take "English," as billiard players call it when they make a ball go forward and then roll backward or in any direction just by the manner in which they strike it with a chalked cue.

This fact of roughness causing it to spin becomes all too evident when a player forgets to chalk his cue and plays several shots thereafter. If the ballier tip of the cue becomes shiny it will slip on the ball. There is no purchase with which it can take hold. But chalk is sticky stuff, and the granules are large, so that a well chalked cue has a very rough surface, and this rough surface of the tip of the cue fits into the rough projections on the ball, and thereby a ball can be given a lot of twist. In order to accomplish this successfully, moreover, the billiard cloth nap must be new and therefore rough.

During recent experimentation with regard to the kinetic theory of gases a Belgian scientist desired to find out how perfect a sphere could be made in order that by the clashing of these together an idea might be secured of the effect of the collisions of the spherical atoms that make up a gas. The project had to be abandoned at last because no machinery could be constructed that would turn out a perfect sphere artificially, and nature has no perfect sphere of large size in all her many forms of matter. Perfect disks could be made, but a round ball was beyond the limits of human accomplishment.—New York-American.

The greatest pleasure is the power to give it.

SHE MET THE SULTAN.

But Wily Reschid Pasha Fooled the Lady and the Monarch.

A certain Countess of Londonderry wanted to meet the Sultan Mahmud II., to whom no European lady had been presented, but Lord Ponsbury, the British ambassador, refused to trifle with precedent. Lady Londonderry then had a talk with Reschid Pasha, the Turkish minister for foreign affairs. The wily Reschid, desiring to do his best for her indyship, made known to the sultan that a person had arrived at Constantinople with a wonderful collection of most valuable jewelry for sale and ventured humbly to suggest that his imperial majesty might like to see the gems. The sultan was interested, and an interview was arranged, but Reschid merely told Lady Londonderry that she would be presented and that the sultan, having heard of the fame of her jewelry, had particularly requested that she would put it all on when she came. The gratified lady did so.

On her arrival at the palace Reschid Pasha conducted Lady Londonderry into the presence of the sultan. Her dress glittered with diamonds, pearls, turquoises and other precious stones. "Pekkel!" ("Good!") said the sultan as Lady Londonderry courtied. "She has magnificent jewels."

Reschid (to the lady)—His majesty graciously bids you welcome. Lady Londonderry bowed and expressed her thanks in French, the language used by Reschid.

Reschid (interpreting)—She says she has other jewelry, but could not put on all.

Sultan—Ask her what is the price of that diamond necklace.

Reschid—His majesty inquires whether this is your first visit to Constantinople?

Lady Londonderry—This is my first visit, and I am delighted.

Reschid (to sultan)—She asks a million of piasters.

Sultan—That is too much.

Reschid (to Lady Londonderry)—His majesty asks whether you have seen the mosques. If not, he offers you a firman.

Lady Londonderry expressed her thanks.

Sultan—What price does she put on that set of turquoises?

Reschid (to Lady Londonderry)—His majesty says that perhaps you would like to take a walk in the garden.

Lady Londonderry expressed her thanks and said she would like to see the imperial garden.

Reschid (to sultan)—She says 400,000 piasters.

Sultan—Take her away. I shall not give such prices.

Reschid (to Lady Londonderry)—His majesty graciously expresses satisfaction at having made your acquaintance.

Lady Londonderry courtied low and withdrew from his majesty's presence to visit the garden with the amiable and courteous Reschid, and afterward she had a delightful story to tell to her friends of the kindness with which the sultan had received her.

Long Drawn Out Elections.

No complaint with regard to undue limitation of polling time was possible in the old parliamentary days. The danger was that polling might be prolonged for a fortnight or a month. Drastic action to bring the poll to a close once provoked a riot in the Westminster division of London. At the general election that began on April 25, 1741, the two Westminster ministerial candidates were on the fifth day of polling well ahead, but an opposition party of electors approaching the hustings in great force, the high bailiff (who favored the ministerialists) declared that he feared a riot and closed the poll. The baffled voters rioted and the military were called out. The high bailiff had afterward to apologize on his knees to the speaker and pay a heavy fine.

An Early Postal Experiment.

As long ago as the seventeenth century the attempt was made to prepay letters by using stamps. In 1653 Paris tried a system that even provided pillar boxes for the letters, which were to have a billet, price 1 sol, attached to the letter or parcel. The experiment met the usual experience of the pioneer—ridicule. Mice were dropped into the letter boxes, and when the letters came to be collected it was found that the animals had made a hearty meal of them. As nobody could be sure of the fate of the parcels, the experiment came to a sudden end.

Maeterlinck on the Future.

Maeterlinck in his book called "Le Mort" says of the mystery of the after death that outside of the religions there are four imaginable solutions and no more. These are total annihilation, survival of our consciousness of today, survival without any sort of consciousness, survival with universal consciousness or with a consciousness different from that which we possess in this world.

The Joke on Father.

She had refused him, and he was "all in." "Reconsider, Annie," he begged, "if you don't I'll blow my brains out." "Huh," said Annie, "that would be a good joke on father, for he thinks you haven't any."—Ladies Home Journal.

Patent.

Binks—Could you lend me \$1 until Saturday? Jinks—I'm busted. Won't have a cent myself until Saturday. Binks—Would you lend it to me then?—New York Globe.

Nature when she adds difficulties adds brains.—Emerson.

GENERAL PICKETT.

The Friendship Between Him and Lincoln and Grant.

A NOVEL BATTLEFIELD SCENE

When the Blue and the Gray Joined in a Birthday Celebration—A Meeting With Grant in Washington—Lincoln's Visit to Mrs. Pickett.

In Mrs. Pickett's introductory chapter to "The Heart of a Soldier. As Revealed in the Intimate Letters of General George E. Pickett, C. S. A." there is an extremely interesting story. It appears that while at Richmond, just after the surrender, she was summoned to the door by a sharp rap. She gives a charming account of what followed:

"With my baby on my arm I answered the knock, opened the door and looked up at a tall, gaunt, sad faced man in ill fitting clothes, who, with the accent of the north, asked: "Is this George Pickett's place?"

"Yes, sir," I answered, "but he is not here."

"I know that, ma'am," he replied, "but I just wanted to see the place. I am Abraham Lincoln."

"The president!" I gasped.

The stranger shook his head and said: "No, ma'am; no, ma'am. Just Abraham Lincoln; George's old friend."

"I am George Pickett's wife, and this is his baby," was all I could say.

My baby pushed away from me and reached his hands to Mr. Lincoln, who took him in his arms. As he did so an expression of rapt, almost divine tenderness and love lighted up the sad face. It was a look that I have never seen on any other face. My baby opened his mouth wide and insisted upon giving his father's friend a dewy, infantile kiss. As Mr. Lincoln gave the little one back to me, shaking his finger at him playfully, he said:

"Tell your father, the rascal, that I forgive him for the sake of that kiss and those bright eyes."

Mrs. Pickett explains the interest Lincoln showed in her husband by stating that it was through Mr. Lincoln's influence that her husband received his appointment to West Point.

One impression the book conveys is that of the kindly and generous feeling that existed between Confederates and Unionists graduated from West Point who had been friends before the war. An exhibition of this feeling was made at the time of the birth of General Pickett's first baby. Mrs. Pickett, telling the story, says:

On the occasion of my son's birth bonfires were lighted in celebration all along Pickett's line. Grant saw them and sent scouts to learn the cause. When they reported he said to General Ingalls: "Haven't we some kindling on this side of the line? Why don't we strike a light for the young Pickett?"

In a little while bonfires were flaming from the Federal line. A few days later there was taken through the lines a baby's silver service engraved, "To George E. Pickett, Jr., from his father's friends, U. S. Grant, Rufus Ingalls, George Suckley."

General Pickett, in a letter from Washington, relates another incident in which this same kindly feeling was manifested:

After breakfast we went, as arranged, to see Grant. I can't just tell you, my darling, about that visit. You'll have to wait till I see you to tell you how the warm hearted, modest old warrior and loyal friend met me; how he took in his hand of your heart-sore soldier—poor, broken, defeated, profession gone—and, looking at him for a moment without speaking, said slowly, "Pickett, if there is anything on the top of God's green earth I can do for you, say so."

When I started to go Grant pulled down a checkbook and said, "Pickett, it seems funny, doesn't it, that I should have any money to offer, but how much do you need?" "Not any, old fellow; not a cent, thank you," I said. "I have plenty."

But Rufus tells me that you have begun to build a house to take the place of the one old Butler burned, and how can you build it without money? You do need some."

"I have sold some timber to pay for it," I told him, and to show my appreciation and gratitude, unobserved, I affectionately squeezed his leg, when he called out: "Rufus, it's the same old George Pickett. Instead of pulling my leg, he's squeezing it."

Sugar For the Heart.

Sugar is a splendid medicine for the heart in certain diseases of this organ. In others, such as oedema, it has no effect. In the London Lancet is reported the cure of a woman of seventy-seven with "rapid, irregular, feeble pulse, cyanosis and attacks of paroxysmal breathing" by the administration of four ounces of lump sugar every twelve hours, gradually diminishing the dose, for several weeks.

A New Way of Finance.

Proprietor—If madame offers to pay for the hat don't show her the bill, and I will increase it. Somebody has to pay our bad debts. Messenger—But if she doesn't offer to pay? Proprietor—Then bring the hat back. We can't add to our bad debts.—Fliegende Blätter.

Some people bear three kinds of trouble—all they had, all they have now and all they expect to have.—Edward Everett Hale.

YOUR OWN VOICE.

How You May Hear it as It Sounds to Other Persons' Ears.

Laloy, who appears to have scientifically investigated the matter, assures us that not only does one not see himself as others see him, but that he does not hear himself as others hear him. Some interesting experiments were made by the French savant in this connection.

In order to ascertain whether a man really knew the sound of his own voice, Laloy has been at some pains to determine the facts. His experiments show that if a person record on a phonograph disk a few sentences pronounced by himself, together with others recorded by friends, and causes the machine to reproduce these, it most frequently happens that the man more easily recognizes the voices of his friends than he does his own.

It appears that the differences lies in the quality of the tone. One hears his own voice not only through the air, as do his auditors, but across the solid parts between the organs of speech and those of hearing. The sound thus produced has a different timbre from that conducted to the ear by the air above.

If one entertain any doubt as to this let him try the following experiments: Take the end of a wooden rod between the teeth and pronounce the vowel continuously. Let the other end be taken alternately between the teeth and released by another person who at the same time stops his ears. The latter will find that every time he seizes the rod in his teeth the sound will be stronger than when it reaches the ear through the air above and that it has a different quality. The passage of sound through a solid body augments its intensity and modifies its quality.—Harper's Weekly.

A DIPLOMATIC KNOT.

It Wasn't Tied in a Tangle Just For the Fun of the Thing.

Ever since diplomacy was first invented its most eminent practitioners have expended their best efforts in mystifying if not in actually deceiving their rivals. Ueber Land und Meer cites an amusing anecdote of diplomatic life in the eighteenth century.

In 1741 Count Bestushew was sent by the emperor of Russia to Stockholm to put the question of war or peace to the Swedish government. Upon arriving the count made known his mission and then waited patiently for an answer.

Finally when he had almost given up hope of getting a reply he received a long communication from the Swedish minister of war. Eagerly Count Bestushew opened the letter, for he knew that it contained the long expected answer. But to his despair he found it so encumbered with official phrases and formalities that he could make nothing of its meaning. For two hours he struggled in vain to comprehend the confused document. Then he hastened to the minister of war.

"My dear Count Bestushew," said the minister when the count had explained his difficulty, "I have no authority to communicate to you orally the contents of this document. I could not think of it."

"But I have puzzled over this for two hours, and still I can make nothing of it."

"Pray, do not blame yourself, count," said the minister. "You could hardly expect to unravel in two hours a document that took me two days to knit and knot together."

Painfully Mixed.

A very fashionable young man stopped at a florist's one hot summer day to order a box of flowers sent to his lady love. At the same time he also purchased a design for the funeral of a friend. On the card for the box he wrote:

"Hoping this may help you to bear the heat."

The other card bore the one word, "Sympathy."

Very soon the girl telephoned: "Thank you so much for the flowers. But why did you write 'Sympathy' on the card?"—National Monthly.

Writing Popular Songs.

Only those who have tried it and failed know the disappointments of the song writer striving to induce a publisher to look at his work. For those who would try here is a tip from one who has made good: "If your song is to make a hit the air must be hard to remember, though catchy and pleasing. If it can be whistled by any one who hears it once or twice it will not sell, and the publisher will reject it."—New York Sun.

Wonderful.

Critic—The heroine of your story, old man, is simply wonderful. Author (delighted)—You think so? Critic—Yes. You say on page ten that she hissed "You are a liar!" and any woman who can hiss such a sentence as that can't help being wonderful.—Boston Transcript.

Cold Comfort.

"Oh, papa, Mr. Spooner proposed last night." "Are you sure he loves you?" "He said he'd die for me, papa." "Well, you'll both die if you try to live on the salary he's getting."—Boston Transcript.

Rather Otherwise.

"Is your daughter musical?" "Well," replied Mr. Cumrox, "she seems so in conversation, but when she sings opinions differ."—Washington Star.

You may stretch a truth into a lie, but you can't shrink a lie into truth.—Selected.

WILD WIND ANTICS

The Havoc That May Come When a Tornado Breaks Loose.

STORMS PLAY QUEER PRANKS

Houses Have Been Carried Bodily Into the Air and Exploded, and Half a Building Has Been Swept Away, While the Rest Remained Unharmed.

The weather bureau at Washington has been collecting statistics and facts about cyclones and tornadoes for many years, and the experts have succeeded in securing considerable valuable data about the big winds; but, after all, the freaks of the storm are the things that give it special interest, and if all these were properly classified some remarkable reading would be furnished. Every visitation of a tornado adds to this valuable storehouse of queer freaks.

It is not uncommon for the whirling wind to cut a house in half, demolishing one side and leaving the other undisturbed. This happened in an Iowa tornado, and the part that was left intact was so little disturbed that the clock on the mantel continued ticking, as if nothing had happened.

In the Texas town of Sherman, which was visited by a tornado in 1896, two houses were picked up and carried into the air, where they exploded. Every one in them was severely injured except a baby, which did not receive so much as a scratch. A man milking a cow in a shed saw the cow and shed carried up in the air, but he was not so much as touched. Not a drop of the milk in his pail was spilled or disturbed.

In the St. Louis tornado of the same year a carpet in the parlor of one house was pulled up by the twister and carried away a few hundred yards without so much as a rent being torn in it. The tacks had been pulled up as neatly as if extracted by a careful carpet layer.

In another house the bedclothing and mattress were lifted from the bed, and the bedstead was left intact. A resident was carried through the roof of another house with the bed and dropped a quarter of a mile away without injury. The mattress saved him in the fall, and he picked himself up in a vacant lot to dress without knowing exactly what had happened to him.

The "twisters" have been known to pull nails out of shingles and then go on to pick up a chimney bodily and carry it through the air. In Kansas one picked up a buggy and landed it in the branches of a tree. At another time it ripped the harness completely off a horse and left horse, buggy and man uninjured. In Louisville, in 1890, a tornado carried the roof off a house and pulled a child from the mother's arms and carried it safely to another house six blocks away.

But these are merely among the harmless freaks of the big wind. There are others more heartrending. It has dismembered human beings, tearing arms and legs from the body, and twisted the hair of women into ropes. In Kansas it drove a piece of scantling six inches square through the body of a hog. At another time it blew in the door of a farmer's house and carried the owner away on the door, to drop him in the branches of a tree. The tornado did not hurt him, but he broke his neck falling from the tree to the ground.

No one has succeeded in measuring the full force of a tornado, but it is known to travel at the rate of 200 miles and more an hour.

Tornadoes are exciting more general attention than formerly because of the greater number of towns and villages located in the tornado belt. Each successive one is more dangerous than its predecessors because it is apt to find more human material to destroy. Formerly it might travel half the length of a continent without finding anything in its path to destroy except grass, trees and occasionally the crops of a solitary farmer. Today, if it followed the same route, it might pass over a dozen villages and towns.

The only thing that can possibly break the force of a tornado is a range of mountains. It may create wild havoc among the trees and bowlders of a mountain, but it cannot carry the mountain itself away. It will uproot giant forest trees, suck the water from wells and streams, twist and demolish iron bridges and carry up houses, but the mountains are proof against the mighty force of the wind.

Until we know how to control the tornado or find some means of baffling it, its menacing danger must always be a source of considerable uneasiness in the great plain sections of the country. But, like earthquakes, the tornado and cyclone do not come every year, and sometimes they defer their visit for a decade or so, for which we may be thankful.—George E. Walsh in Harper's Weekly.

The Pleasure of Raising Whiskers.

The enthusiasm of those engaged in the cultivation of whiskers is inspiring. A man with a full beard may in a lucid moment shave it off. But watch him closely. Within ten days he will show signs of returning to his old life almost as certainly as a murderer will return to the scene of his crime.—American Magazine.

Didn't Get a Chance.

"Did your son who went to the city to make his fortune deliver the goods?" "No. He was caught with them before he had a chance."—Houston Post.

Doing well depends upon doing completely.—Persian Proverb.

AN ANECDOTE OF M'KINLEY.

His Gentle Rebuke to a Department Chief's Subordinate.

President McKinley's scrupulous loyalty to his cabinet officers is spoken of as one of his characteristics. It is said that he never went over the heads of his secretaries to consult an assistant, but held each to responsibility for his department.

Of all the events of his administration probably none was a source of more anxiety to him than the decision of the supreme court on the status of the colonies. It was a matter of great moment whether the highest judicial body should uphold the view of the administration that the constitution sanctioned the possession of colonies which were not granted full representation. There were conflicting rumors and forecasts of the color of the decision, and these added to the tension felt at Washington. Shortly before the announcement of the finding of the court a subordinate officer of one of the departments appeared at the White House at an unusual hour and insisted upon seeing the president on the plea of important business. Having been admitted, he came at once to his errand.

"Mr. President, I have some good news for you. I have just learned authoritatively that the decision of the supreme court is to be in your favor." He fairly glowed with the importance of his welcome message.

"Thank you," said Mr. McKinley quietly. "That is good news. But have you informed your chief?"

"No, Mr. President. I thought you ought to be the first to know it."

"Well, Mr. —, I'm sorry for that. Now, will you please do me the favor to go at once to your chief and give him the information so that he may communicate it to me?"—Silas Harper in Century.

SPINNING ASBESTOS.

A Thread a Hundred Yards Long and Only an Ounce in Weight.

When it leaves the cobbing sheds asbestos is sent to the spinning mills in bags containing about 100 pounds. It is then first carded by a machine somewhat resembling the saw tooth gin seen in cotton mills. This machine separates the tangled fibers, upon the completion of which operation there occurs a final carding on a regular carding machine. Leaving this carding machine the asbestos is combed smoothly and the fibers are laid parallel in a uniform mass.

The next step is to treat this mass in a rotary spinning machine. First the mass is spun into a coarse yarn. Then it is drawn and spun until it becomes fine and quite strong. In case a hard, strong thread is required for certain fabrics the asbestos yarn is placed in a doubling and twisting machine, where two or more of the yarn threads are combined. If the asbestos is to be impregnated with rubber a smooth, hard finished thread is not desirable.

For a long time the problem of spinning asbestos presented many difficulties by reason of the manner in which the threads persisted in slipping past one another. Eventually it was found that, under the microscope, a thread of asbestos displayed a notched surface and that by means of special twisting the spinning could be successfully accomplished. The result is that, after many years of experiment, manufacturers nowadays are able to turn out a single asbestos thread 100 yards in length and not exceeding an ounce in weight.—Exchange.

A Voice Without a Soul.

Tibet's dala lama was greatly disturbed by the first phonograph he saw. Edmund Candler, when in Lassa with the Younghusband expedition, heard from the Nepalese resident how he had recently brought the uncanny toy as a present from the maharajah of Nepal to the priest king. The dala lama walked around it uneasily as it bared forth an English band piece and an intricate Bhutanese song. Then he thought for a long while, and finally said he could not live with this voice without a soul. So it was passed on to somebody else.

A Paternal Proposition.

"The government throws all the obsolete army weapons in the junk pile. They are unsalable." "Seems to me the government gives very little thought to pleasing its citizens." "How now?" "Think of the innocent joy that would result if they buried those weapons on the various battlefields for tourists to dig up."—Kansas City Journal.

Ovid and Aviation.

If the aviators of today wish for a classical motto, what better can they take than this passage from Ovid's "Ars Amatoria," 2, 43—

quis crederet umquam Aeras hominem carpere posse viam? which means, "Who would believe that man will ever be able to take aerial paths?"—Youth's Companion.

Real Obliging.

Creditor—I should like to know when you are going to pay this bill. I can't come here every day in the week. Debtor—What day would suit you best? Creditor—Saturday. Debtor—Very well, then you can call here every Saturday.—London Opinion.

Never Lonesome.

"You really like country life, do you, Dobby?" asked Petlow. "You bet I do," said Dobson. "What do you do with yourself?" "Oh, I come to town," said Dobson.—Harper's Weekly.