

STEEL FOR ARTILLERY.

Tremendous Pressure the Barrels of Big Guns Must Bear.

Modern high powered guns could not be built without steel strong enough to resist the enormous pressures to which they are subjected. Few understand how great these pressures are—almost as far beyond ordinary comprehension as are the distances of the stars or the number of atoms in a glass of water. An attempt to state the matter in a form that will mean something to the ordinary mind is made by a contributor to *La Nature* in an article entitled "The Strains Resisted by Gun Metal." He writes:

"When the marvels of modern artillery are described perhaps we direct our admiration too exclusively to the mechanicians who have combined to construct it. We must not, however, forget the metallurgist, for it is owing to the astonishing qualities of the metal that the gun is so well able to resist the enormous strain due to the detonation of the explosive.

"It is interesting to cite here some figures published by Commandant Regnault. At each discharge of a gun, in the case of our field pieces, in less than three-tenths of a second the pressure exceeds twenty tons to the square inch, and the speed of the projectile leaving the muzzle is more than 2,500 feet a second.

"The energy developed may be put at about 500,000 foot pounds. In other words, considering the cannon as a motor working during an exceedingly short time, we may place its rating at about 20,000,000 horsepower.

"Not only must the metal be made to resist these strains time after time, but to do so under unfavorable conditions, such as the high temperatures produced by the explosives. And not only must the metal of the gun be as strong as this, but it is the same with that of the shell. The shell of our 'seventy-five' supports a pressure estimated at seventeen tons. The work of the device that takes up the recoil reaches about twelve tons to the square inch, and the mount neutralizes at each discharge about two tons.

"In fact, these conditions are realized in quite a remarkable way. It has been possible to test in the machine shop the pieces of a battery that has fired several thousand shots and to show that they have suffered not the slightest deformation.

"This is why it is necessary to employ special steels. The use of nickel, in proportion of 1 per cent to 2 per cent, gives to steel special qualities."

HIS VIEW OF TIPPING.

It Was Not the Mere Money That the Old Waiter Craved.

Tips are said to be an evil of our times, but the man who has to give them makes the statement. That vast number that receives the largest has probably found it no crime. There is much to be said on both sides, but I cannot think that it is a system which should be, indeed, can be abolished, for the giving of a tip is the recognition of personal service. It is the only way one can thank a man who is not, in his present capacity at least, in the class of the one who dispenses the coin. And there is another reason—to argue for the other side—that was most beautifully exemplified in a story which came to me recently.

A friend of mine took into service as indoor man one who had attracted her attention as a most perfect waiter in a hotel. She paid him the same amount that he averaged as a waiter, and she found him as satisfactory in her own home as she had expected him to be. Yet at the end of a few months he begged to return to his more exhausting duties in a great caravansary.

"I don't know as I can make it plain to you, madam," he said to her earnestly, "but it's the tips that I look forward to. Not that they are any more, on the whole, than I get here, but there's always an uncertainty about it. I keep wondering if I am to get a good deal or very little, and it makes the day interesting. It's a kind of an adventure, in a manner of speaking, madam."—*Louise Closser Hale in Century.*

Leading Up to It.

"Please, Mrs. Brown," said the little boy at the kitchen door, "ma wants to know if you'd be so kind as to lend her an egg beater to beat some eggs with."

"Why, certainly," replied Mrs. Brown. "Here it is."

"And if it ain't too much trouble," continued the boy, "would you mind lending her a couple of eggs to beat with it?"—*St. Louis Post-Dispatch.*

Very Thoughtful.

Customer (at railroad restaurant)—Here, boss, this coffee is cold.
Proprietor—Yes, sir; you see, the train only stops a few minutes, and if the coffee was hot you wouldn't have time to drink it.—*St. Louis Globe-Democrat.*

The Llama.

About the heaviest load that a llama will allow to be placed on its back is a weight of 125 pounds. If any heavier load be placed on the animal's back the wise beast lies down, and no amount of coaxing or beating can make it move an inch.

Two Views.

"Would you like some views of the hotel to send to your friends?"
"Sir," said the disgruntled guest, "I presume it will be better for me to keep my views to myself."—*Louisville Courier-Journal.*

I worked with patience which means almost power.—*Mrs. Browning.*

WHISTLER AT WEST POINT.

He Loved Truth and Took Punishment Rather Than Lie.

At West Point was old Joe, the negro cadet hair cutter. He was never known to smile or to deviate from "regulations." Once a month cadets were obliged to have their hair cut by him. This was a great worry to Whistler, who disliked to part with his pretty locks, so he would try by cajolery and flattery to have Joe let up a little on the length of his hair. But in this he was never successful. Joe would stop his shears in the midst of a remonstrance and say, "Mr. Whistler, do you want me to cut your hair according to regulations or not?" Of course this put an end to the argument, and Whistler would come back to our rooms, look in the glass and swear about Joe.

He loved frankness, truth and honor. Cards were forbidden in cadet barracks, but we had a pack, and one night long after "taps" (10 o'clock) we had been playing, and the cards lay carelessly aside, when we were surprised by the entrance of the inspecting officer, who spled the cards. We knew that the offense was a serious one against discipline and considered whether we could properly ask that the report should read "Cards in possession," a lesser offense, instead of "Playing cards," as we were not playing when the inspector saw us. Whistler said, "No, we had been playing," so we faced the music and as punishment lost our cadet furloughs for a summer.—*H. M. Lazelle in Century.*

DIDN'T QUITE DODGE.

When the Elder Booth Tried to Escape a Man Who Bored Him.

Thomas R. Gould admired the elder Booth almost to adoration. The most minute and instructive account that exists of Booth's acting was written by him—a book called "The Tragedian"—and Gould's marble bust of Booth, a noble work of art (made before the comedian Flynn broke Booth's nose with a pewter pot), is the best likeness of that great actor. But Gould's assiduous personal attentions to Booth became wearisome to that eccentric man and vexed him. Peculiar discretion is sometimes requisite to those who would praise and please eminent persons. Booth, when acting in Boston, customarily lodged at an old hotel called the Albion, situated in Tremont street, at the northwest corner of Court street.

"One day," said Edwin, "my father dashed into the bedroom where I was sitting and, almost breathless with haste, exclaimed: 'Gould! Coming up! Say I'm out,' and literally dived underneath the bed. I received Mr. Gould, who seemed surprised not to find my father (I think he had seen him rushing upstairs), and he talked with me for several minutes. Then there was a moment of silence, and my father, becoming impatient, thrust his head out from under the bed, inquiring as he did so:

"Is that infernal bore gone yet? Imagine the effect!"—*Collier's Weekly.*

The Voracious Cormorant.

How a cormorant dives for sea trout and gets them is told by a writer: "I had the cormorant under observation only for the space of four or five minutes, and during that short period it had captured four sea trout, all of considerable size. After being under water for a few seconds the bird would reappear with a sea trout wriggling in its bill. But in spite of the victim's desperate efforts to escape it was deftly swallowed, and after a few gulps the cormorant would resume its fishing operations. One of the sea trout gave it considerable trouble, however, for the fish struggled violently for some moments, but was deftly placed so that its head pointed down its captor's throat, and thus its own struggles assisted the bird to swallow it."

Early History of Rubber.

Rubber is first known to history as a plaything. It was during Columbus' second voyage that Herrera observed that the inhabitants of Haiti played a game with balls "made of the gum of a tree." Even as early as the beginning of the seventeenth century, however, the Spaniards used rubber to waterproof their cloaks, but the fact attracted no attention in the old world, and it was not until the eighteenth century that the rubber industry began. Early writers mention an oil extracted from rubber which was taken medicinally with cocoa.

Before and After.

Before marriage he has a duck sit if she sees him with a shave and massage that are less than two hours old or the perfect poise of his correct the flustered a hair's breadth, but afterward he comes to the table with his shoestrings untied, no collar on and a stubby growth of beard that would play a tune if you ran it through a music box.—*Judge.*

Questioning Grandma.

"Grandma," inquired her little grandson the day of her arrival, "did you sleep on your face last night?"
"Of course not, dear! Why do you ask that?"
"Cause it's all wrinkled."—*Exchange.*

Lost Both Ways.

"Did you get in without your wife hearing you last night?"
"No, and I didn't get in without hearing her, either."—*Houston Post.*

The Addition.

Cawker—I've had another addition to my family since I saw you last. Cumsö—You don't say? Boy or girl? Cawker—Son-in-law.—*Puck.*

RAYS FROM THE SUN.

They Become Light to Us Only Upon Striking Our Atmosphere.

The rays of light that reach us from the sun are not light in themselves. For instance, to show what is meant, suppose you were placed out in empty space, facing so that you would look sidewise at the light rays passing from the sun to the earth. You would not see them at all. You could only see them if you looked directly at the sun, so that the rays would enter your eyes and, striking upon the retina, produce there the impression of light.

The rays passing by and not entering your eyes would be invisible because in open space there is no medium like the atmosphere to scatter the rays in all directions and thus produce an illumination all around.

The sky at night is full of passing sunbeams and star beams, a vast and inextricable web of radiations, but they lie beyond the limits of the atmosphere, and only those are transformed into light which by reflection from a planet in the case of sunbeams or by coming straight into the eye from a star directly affect the nerves of vision.—*Garrett P. Serviss in New York Journal.*

UNDER AN AVALANCHÉ.

A Remarkable Experience and Rescue in the Italian Alps.

Human beings occasionally live through incredibly long imprisonments after their dwellings have been overwhelmed by avalanches. On March 19, 1755, avalanches buried the village of Bergamotto, in the Italian Alps, and on April 25 three women were dug out alive from a stable in which they had been immured for thirty-seven days in the dark beneath the mass of snow which lay forty-two feet higher than the roof. With them had been buried a little boy, six goats, a donkey and some hens.

The child, the donkey and the fowls soon died, but the goats helped the women to survive, their milk supplementing the thirty or forty cakes and the pocketful of chestnuts upon which they depended for food. Hope of finding the women alive had been abandoned when far in April the brother of one had a dream in which she appealed to him for rescue.

The weather then at last made excavation possible, and the women were restored to the world and presently to health.—*Chicago News.*

Culture.

Culture is a slow process. It comes from long and close contacts. It is the fruit of reflection, of travail of soul and of mind. Grappling with something until the very essence of it has been extracted is a first step. Thus the tastes of essences is learned, and once learned lesser distillations do not satisfy. Then follows a growing power to discriminate, to distinguish nice values, to judge of quality, to answer to beauty, to feel the need, that what you have, though it may be little, may still be the real thing. This is culture. It is not baggage, like diplomas and degrees. It is not things seen and heard, miles traveled or books read. These are the materials for culture. They contribute to it only when they are absorbed by the mind and as really lost in it as water and lime, phosphates and ammonia must be lost in the soil if they are to enrich it and enable it to increase its yield.—*Ida M. Tarbell in Woman's Home Companion.*

A Personal Application.

A well known business man in Lawrence, Mass., once had a customer who contracted a debt that ran unpaid for a year or more, and even several letters failed to bring about a settlement. One day, while glancing over the religious notices in a local paper, the business man saw something that gave him a new idea. He went to his desk and wrote the following note to the debtor:

My Dear Sir—I see in the local press that you are to deliver an address on Friday evening before the Y. M. C. A. on "The Sinner's Balanced Account." I inclose yours, as yet unbalanced, and trust that I may have the pleasure of attending your lecture.

A check came by the next mail.—*Youth's Companion.*

New Ways of Saying It.

"Strain at a goat and swallow a camel" came from the lips of an old friend as "Gag at a straw and swallow a whole load of hay." Of a certain girl she said, "She smiles like a frog at the girls and grins like a rag carpet at the boys." I have never seen a rag carpet since but it resolves itself into rows of grinning teeth, and as for the drooping smile of the frog, it certainly speaks for itself, as it were.—*Woman's Home Companion.*

Dan Emmet.

"Dixie," one of the most famous American songs, was written in 1859 by Daniel Emmet, an American song writer and minstrel, who was born in Ohio in 1815. He appeared in many cities of this country and England and at one time was associated with Dan Bryant.

He Knew.

"I had a seventy mile drive yesterday," she said enthusiastically.
"There ain't no such thing," retorted the golf player grimly.—*Detroit Free Press.*

Something Like It.

"I hear your husband is crazy about his new auto."
"I should say so! He's a perfect autocrat."—*Baltimore American.*

Fortune cannot take away what she did not give.—*Seneca.*

DRESS UP BOYS RIGHT NOW

You will never get clothes for less money than right now.

You Need the Clothes
We Need the Money

Let's get together, for it's money saved for YOU, and WE must sell the Suits.

Come in and dress up at the

THE DAYLIGHT STORE	<i>Dallas Mercantile Co.</i>	THE DAYLIGHT STORE
--------------------------	------------------------------	--------------------------

WHAT'S DOING IT?

Strange, isn't it? But it is true, isn't it? The way some of your old friends and customers send their money to folks they do not know and for goods they have never seen.

You would naturally incline to the belief that people would prefer to buy goods after having had an opportunity to inspect them, and to make the purchase from people whom they know.

There was a time when shopping was largely a matter of personal contact. Today the distant store and the mail order house get into close touch with thousands, who are made acquainted with their goods and their methods of doing business. How is this done? Advertising—constant and effective advertising.

Many arguments are used to make customers out of the readers of advertising. These advertisements draw business from you and the other local dealers.

Consider the results obtained by the national magazine advertisers, and you will cease to wonder what is the magnet that draws to the city department store and the catalogue house, hundreds of miles away, the trade that you should enjoy. It is surprising that they do not take more dollars out of this community than they do.

Now mind you, *The Observer* is not talking just for its business but for yours as well, and for your neighbor's. For if you do not thrive, *The Observer* will not. Naturally, and somewhat selfishly, *The Observer* is interested in this community.