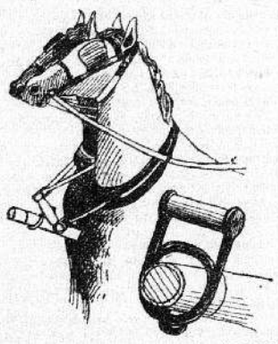
# SCIENTIFIC WORLD.

## SIGNS OF THE TIMES WRITTEN BY INVENTORS.

**A Son of Japan Comes to the Front With a Device for Walking on Water — An Invention for Horse-Owners—Notes of the World's Progress**

### An Improved Neck Yoke.

The simple harness attachment shown in the illustration is mainly designed for securing the breast straps to the neck yoke, although capable of other uses. It has been patented by Mr. Lewis W. Rothrock, of Morrisdale Mines, Pa. As shown more in detail



ROTHROCK'S NECK YOKE ATTACHMENT.

in the small view the attachment consists of a ring having parallel arms, supporting a roller movement held in position by a bolt, there being on the bolt a loose sleeve slightly longer than the roller, preventing the binding of the arms against the roller. The device is light and strong and saves the breast straps from wear.

### American Railways.

According to Poor's "Manual," the total number of mile of railroad in the United States at the close of the year 1891 was 170,601, of which 4,471 miles were constructed during the year.

The total share capital and indebtedness of all kinds of all the roads making returns equaled at the close of the year $10,389,834,228, an increase in the year of $267,198,328 over the total of 1890 ($10,122,635,900), the rate of increase for the year being 2.6 per cent.

The cost per mile of all roads making return, as measured by the amount of their stocks and bonded indebtedness, equaled $59,820, against $59,577 for 1890.

In 1891 the gross earnings of $1,138,024,459 equaled 9.1 per cent of the total investment, aggregating $10,389,834,228; and net earnings, $356,209,880, equaled 3.1 per cent. The total amount of interest payments in 1891 was equal to 4.25 per cent of the aggregate bonded indebtedness of all companies, as against 4.27 per cent in 1890 and 4.40 per cent in 1889; and the total amount of dividend payments was equal to 1.85 per cent on all paid up capital stock in 1891, 1.80 per cent in 1890 and 1.81 per cen in 1889.

During the period for which a large proportion of the companies reported in 1891, the business interests of the country were in a depressed condition. But the abundant crops of last year, and those now to a large extent assured for this year, would seem to predicate therefor an unusually brilliant showing.

### A Horse with a Tube in Its Neck.

For half an hour one afternoon recently a crowd surrounded a truck which had halted in front of the exchange place door of the Mills building. Attached to the truck was a horse, and there was a peculiarity in the animal's appearance which had caused the crowd to gather.

The horse was doing its breathing, not through its nostrils, but through a tube inserted in its neck. The contrivance looked very much like an old-fashioned candlestick with the base and an inch or two of the shank showing. In the tube was a sort of filter, to catch impurities in the air which passed through it, and the arrangement appeared to work very satisfactorily.

The driver explained that tracheotomy had been resorted to to save the life of the horse, which had suffered from asthma. The tube had been in use for several months, and the horse appeared to be as well as ever. It was certainly able to do its full share of work. Every two or three days the tube was taken out and cleaned, but the horse had it in its neck the rest of the time.—N. Y. Times.

### The Arrow Poison in the New Hebrides.

M. Dantec has examined and experimented with the arrow poison used by the natives of the New Hebrides. He finds that it contains neither vegetable poison nor serpent virus, but consists of earth impregnated with vegetable matter taken from marshy places and containing Pasteur's vibrion septique, or bacillus of malignant œdema and also the bacillus of tetanus. If the arrows have been kept a long time, or have been much exposed to the sun, the vibrion septique may have been destroyed; the danger then is from tetanus. When the arrows have been freshly prepared and the vibrion septique is still active, a wound from them causes death in a guinea pig from septicæmia in from twelve to fifteen hours; tetanus, which takes longer than that period of time to develop, does not under these circumstances show itself. It is interesting to remark that the horse is unknown in these islands, consequently the theory of the equine origin of tetanus would seem to be negatived by these researches.—Lancet.

### The Drawing Frame.

Drawing or doubling is the operation through which the cotton has to pass after it has been carded. The ends, bands, or silvers, as they come from the card, are exceedingly tender and loose, the fibers of cotton not being yet arranged in the parallel form requisite for good spinning. Before any twist is given to the bands, the fibers should be in a proper position for the manufacture of smooth yarn. The doubling and drawing out of the bands, which accomplishes this perfectly, is done on the drawing frame. Some drawing frames are constructed with three pairs of rollers, and some with four pairs; the latter having the advantage of doing more work in the same time. The rollers in a drawing frame are generally so adjusted that the drawing rollers, the middle roller having but little influence on the result so far as the stretching is concerned. Where there are three or four rollers, the drawing is performed twice; each pair of rollers draws a certain amount.

### Improvement of Aluminum.

An account of a process invented by Reinhardt Mannessmann for increasing the resistance of aluminum to atmospherical, chemical or mechanical influences is given in the Moniteur Scientifique. The inventor says that the addition of a little tungsten to pure aluminum or its alloys communicates a remarkable resistance to the action of cold or hot water, salt water, and other reagents. When the proportion of tungsten is sufficient, the alloys formed offer among other physical properties resistance to traction and tension. The proportion of tungsten can be varied within extremely wide limits, according to the composition and nature of the alloy, and according to the usage for which it is destined. The tungsten can be added, alloyed with other metals; still the most advantageous way consists in adding the tungsten before the aluminum is melted.

### Detection of Frozen Meat.

The process adopted by the author for distinguishing between fresh meat and that which has been preserved in the frozen state consists in expressing a little blood or meat juice from the sample, and examining it under the microscope. The whole operation must be performed quickly, in order to prevent any drying up of the liquid under examination. When the juice of fresh flesh is thus examined, it is seen to contain numerous red corpuscles, which are normal in color, and float in a clear serum. In the case of blood from frozen flesh the corpuscles have dissolved in the serum under the influence of the low temperature, and not a single normal red corpuscle can be seen. The hæmoglobin escapes into the serum, and appears as irregular yellow-brown crystals. These may be frequently seen by the naked eye, but, in every case, can be readily detected under the microscope.—Maljean, in J. Pharm. Chim., Chem. Zeit.

### For Duck Hunting.

Superintendent Ed Murphy of the Cincinnati gymnasium and several sportsmen are much interested in a novel apparatus, which is calculated to make wild duck hunting an easy task. The new invention, which is credited to a Japanese gentleman, promises to be a great boon to sportsmen. It consists of three floats joined together at the top, where there is a convenient seat on which the sportsman sits. To his boots are attached shovel-like ears, by means of which he propels himself in any direction.

It is said the Jap who invented the novel hunting apparatus worked at it twenty years. The foot-gear is a composition of iron, paper, gum elastic and

A JAP'S INVENTION.

wood, eliptical in shape, with gutta-percha tubes and a life belt attached. Just how locomotion is achieved is not known, but it is said that the "wearer" can make five miles an hour and carry twenty-five pounds of luggage. The Jap's idea is certainly a popular one, and a few Cincinnati sportsmen are very anxious to see one of the new machines.

### Scientific Drops.

Five volumnes of air contain one volume of oxygen.

The celebrated high electric light mast at Minneapolis, which is 257 feet high, has proved ineffective for lighting purposes, and is now no longer used.

One of the latest inventions in connection with the application of electricity to street car service is a self-lubricating gear for trolleys, which needs no attention after being once put in operation. Professor Dewar, whose recent lecture and demonstrations on the liquefaction of oxygen attracted attention all over the world, says that while oxygen when liquefied is strongly magnetic it is a poor conductor of electricity. In other words, oxygen presents the curious paradox of a non-conducting magnet.

Carbonic acid gas, which is ejected in large quantities from the earth, is being utalized in several localities. At Burgbrohl, near Coblentz, a carbonic acid spring opened during boring operations, and which is eight inches wide and some thirty or forty feet high, is being used in the impregnation of mineral waters.

### Sentences Passed by the Judge.

Love hath but two requirements—the first, to love; the second, to be loved.

Better a mundane steed well in harness than Pegasus among the clouds.

When fame writes to posterity she most frequently uses sympathetic ink.

Without the evidence of drawn blood it is easy to ignore the possibility of pain.

In his development for the brute man is gradually demonstrating his complete independence of animal power and products.

When in doubt or uncertainty about one's own plans or affairs one may gain considerable enlightenment by applying to one's neighbor.

A temptation encountered by chance and yielded to by accident from that moment becomes a monster in the path, ever to be encountered at that point and fought and overcome or yielded to

### A Free Subject.

Baggs (to recent settler)—What political party do you belong to, my friend?

O'Toole—Belong to, is it? Phat's the objec' of belongin' to ayther wan? Ye can't sell when they owns you.—

# ODD RITES IN RUSSIA.

## CEREMONY OF DRIVING OUT DEATH IN THAT LAND.

**A Figure Painted as Death Taken to the River and Ducked—A Free Fight—It Takes All Day to Drive Out Death.**

"Death Week," the "Smartna Nedelya" of the Slavonic peoples, marks the end of winter in rural Russia. It is kept during the last seven days of March, and is a survival pure and simple of early paganism.

In the last week of March, therefore, before the ice begins to break, the peasants in rural Russia start the "death week" celebration by preparing a sacrifice to the "Vodyanoi," so that he shall not be kept waiting when he awakes from his winter's sleep. They meet together in the village where the celebration is to take place and subscribe a sum of money for the purchase of a young horse. The animal must not be a gift, but bought with money; it must not be bargained for, and no one person must contribute more than another to the amount required. The horse is taken to a stable specially reserved for the gift to the "Vodyanoi," and fed for three days on bread and oil cake.

On the fourth day at midnight the horse is taken from the stall and conducted to the nearest river or stream, the villagers following in a body. The mane is decorated with red ribbons, the head smeared with honey, the legs are tied together, and a couple of mill-stones secured to the neck. Then a hole is made in the ice and the horse thrown into the water, a living sacrifice to the "Vodyanoi." Fisherfolk in the Archangel district pour a quantity of fat into the water instead of throwing in a horse; and the millers of the Ukraine cast the horse's head into the river, and not the living animal.

On the following day the ceremony known as the "Lyalya" takes place. The "Lyalya" is not the goddess of spring, but a personification of the season. The ceremony of the day is known as the "Lyalynik," and only young, unmarried girls take part in it. They all meet in a field outside the village, and select one, who is to be the "Lyalya." She is attired in a white robe, with a crown of green stuff on her head and a staff, decorated with green leaves, in her hands. Barefooted, the girls then perambulate the village, headed by the "Lyalya," stopping at certain dwellings settled upon beforehand.

At the first of the houses where a halt is made a cake prepared over night is handed to the party. At the next they receive a basket containing as many eggs as there are girls in the procession and one over. At the third house they get a measure of mixed grain. Preceded still by the "Lyalya" they leave the village, stopping, however, at the last house, where the egg is taken from the basketful and thrown clear over the roof, the party now makes the round of the fields belonging to the village, each one dipping her hand into the grain measure and strewing a few of the seeds over the ground. This is supposed to ensure fertility in the coming year.

When all the fields have been traversed, the procession returns to the spot whence a start was made; the cake and eggs are divided, and each girl returns to her home. The egg and cake must not be eaten, but are preserved as charms against all sorts of misfortune. The young women who have taken part in the procession can, if they are curious that way, ascertain on the night of the "Lyalya" whether they are likely to marry within the course of the next twelve months, and if so, in which month. They first procure an onion, and take off twelve layers and put them in a row between the pieces of the "Lyalya" cake and the egg. Each layer of onion represents a month, and if one of them be quite dry by the morning it is a sign of marriage, and the order in which the piece stands shows the month in which the marriage will take place.

All is now ready for the ceremony of driving out Death from which the week derives its designation. Early in the morning the residents of the village—men, women and children—meet in the market place. Some bring packages of rags and old clothes, others bundles of straw, long sticks and cross pieces. Out of these three or four expert hands accustomed to the work manufacture a dummy figure resembling an old woman. The face is painted and made as hideous as possible. This is the figure of Death—Death, according to Slavonic mythology, being a woman.

The dummy is perched aloft upon a long pole which is given to a sturdy peasant who is dressed out in what is left of the rags and tatters used in the construction of the figure. The men then arm themselves with whips and whistles, the women and children bring pots and pans and iron kettles—any utensils, in fact, they can bang upon and make a clatter with—and the procession starts, the peasant carrying the image of death in front. Off he starts at a smart run, the villagers after him, cracking their whips, blowing their whistles, banging on the pots and pans. On the party go, shouting and hooting driving Death in front, to the nearest river or stream. Here a halt is made, a circle is formed by the riverside and the dummy is thrown headlong into the water.

The party then return in orderly procession, calling out as they march along: "We have driven out Death and bring in the New Year." In many parts of Russia the villagers content themselves with giving the figure of Death a good ducking and then throwing it upon the nearest piece of vacant ground. In such cases, too, if the villagers happen to have a grievance against any neighboring hamlet they carry the figure to the boundaries of the latter and leave it upon their neighbors' land. This is certain to lead to a series of free fights between the two villages.

It is an insult to throw the figure of death on other people's land, and is considered to bring misfortune with it besides. The dummy is carried back by those who find it within their boundaries, while the village folk who left it there gather to oppose its return. The fighting in such cases is prolonged, and is not infrequently attended with fatal results. The more peaceable villagers are content to leave the dummy in the water where it is thrown.

On returning to the village sundry additions are made to the instruments with which the people are provided. The bells are taken from the necks of cows, as well as the horns used for calling cattle together. One or two procure drums to beat. Then men, women and children begin to run around the village as fast as possible. The object of this is to drive out the evil spirits death is supposed to have left behind. The quicker the people go and the more noise they make, the more effectually is the place cleared of the imps supposed to follow in the train of death, and the greater will be the blessings of the coming season.

# PUTNAM'S PLOW.

**Relic of the Famous Revolutionist Just Discovered**

This time it was the implement of peace, not of war, that attracted the attention and interest of A. E. Brooks of Hartford, Conn., the well-known relic hunter, the incident suggesting a bit of scriptural prophecy that swords should be beaten into plowshares and spears into pruning hooks. It is in curious contrast, this old plow that the tireless relic hunter has found with the arsenal of antique arms, battle axes (figuratively speaking) and magazine guns which Mr. Brooks had collected.

There appears to be no doubt about the pedigree of this old-time mellower of the soil of Windham county. There is evidence enough to convince a modern jury that Putman unhitched his steed from this very plow the moment the news reached him that Lexington had been attacked by the British soldiery, and left in the middle of the field to win a major-general's straps. The old hero ran from the plow, as Daniel Webster is said to have "hung" up his scythe. Long ago W. C. Jacobs & Co., of Danielsonville, hardware dealers in that prosperous borough, obtained possession of the plow and used it for a sign. It has been "under the weather" a good deal since then, and is the worse for wear in consequence of the service that it had been "put" to.

Mr. Brooks learned of the existence of the abandoned old "field-day" implement of the hero of Pomfret and determined on its rescue. The ancient ante-Revolutionary plow, which he now has on exhibition, was recently sent to Providence, with the intention, probably, of vindicating the idea that in Connecticut originated not only wooden nutmegs but also wooden plows. The frame and mold-board are of wood, with scraps of iron. These were put in to strengthen the work, not being originally a part of it. The joint and cutters are of wrought iron. The old handles and beams are of primitive cut.

The right handle has been broken midway from the mold; one of the cross rounds is also gone. Still enough of this work remains, however, to show what the original outlines were. Jacobs & Co. had become possessed of the notion that the plow ought to be sent to the world's fair, and were making arrangements to that end when the appearance of Mr. Brooks on the scene changed their plans. Mr. Brooks had a long interview with them the result of which was he bought the relic and had it shipped to Hartford.

### After such an Agreement.

A married couple recently appeared at the Southwestern police court in London. The lady had signed the following document before marriage, drawn up, she said, at a solicitor's office: "After our marriage during our lifetime, I will never take deed of separation, nor never put you any kind of blame, or never leave you, and I solemnly promise to look after you, and give you nice dinners, and everything you require, with my love and true faith. We will always live in one place, and live together, and enjoy ourselves. If I broke this promise after married, I shall not get anything or money from him" (her husband). And yet after eight months of "married" the lady wants a separation and an allowance!

### A Village of Old People.

In Bellavista, near Portici, Italy, a small colony includes more than twenty people who are over 90 years old, headed by a farmer aged 105 who still works in the fields. They are all natives, and have lived with hardly any meat in their diet and drinking only rainwater from a cistern.

### Every-Day Life.

Mrs. D'Avnoo, at front window—Officer! Policeman — Yes ma'am; what's wrong ma'am? Mrs. D'Avnoo—Nothing's wrong, but I wish you'd step into the kitchen and tell the cook not to burn that meat as she did last night. I'm afraid to.—New York Weekly.

### What Shortened the Trip.

"Why, hello, old man! I thought you intended to make your European trip last a year?"

"I did, but my wife found a new fashion in gowns in Paris and hurried home to be the first to wear it."

## CHIPS AND SHAVINGS.

Valdosta, Ga., claims to have a white deer.

Birdsboro, Pa., boasts of a four-legged duckling.

A Washington, D. C., man has been poisoned from a crab's bite.

They call a bicycle "the devil's chariot" in Turkey, and the sultan forbids its use.

A dwarf residing at Shigaken, Japan, is thirty-six years old and but seventeen inches high.

Within the last thirty years there have been on the British coasts 66,377 wrecks, with the fearful loss of 22,312 lives.

The origin of maize, or Indian corn, is unknown, but it was first cultivated by white men on the James river, Virginia, in 1608.

A European lady in Japan has collected 700 teapots of different patterns and kinds, and yet scores of typical shapes are not included in her assortment.

The colored people of Georgia have formed a society called the Upper Ten. The members agree that after a certain date they will do no more work for the white people.

It is noted that Chicago has viaducts, auditoriums, boulevards and natatoriums, while poor old Boston is obliged to struggle along with bridges, halls, roads and swimming schools.

# IN A LIGHTNING FLASH.

## THE BOLT REVEALED THE TERRIBLE DANGER.

**The Ship Was Bearing Down Upon Them Before the Hurricane and But for the Lightning Would Have Sent All Souls to Davy Jones.**

In the month of June, 1884, business called me to Martinique. The Corsica, a staunch, full-rigged brig, owned by Bartol, of Baltimore, was the only vessel which offered me means of transit at the time, and in her I took passage. She was not meant for passenger traffic, and had no accommodation therefor; but I had known her commander, Captain Paine, in other years, and he welcomed me cordially and made me comfortable.

Toward the night of the Fourth of July we had got into the region of storms, and shortly after 7 o'clock on the evening of that day the wind came out from the northeast, and very soon great drops of rain came pattering upon the deck.

"There's thunder in this," said Paine who had donned his storm-gear.

It was now as dark as dark could be. The blackness was so utter that there was relief in closing one's eyes.

Not a trace of our tall spars could I detect, and the men who stood only a few feet off were hidden as by an opaque barrier. And the rain now came down in torrents.

The brig was heading upon her course, very near south, with the wind upon the larboard quarter. By and by a blinding flash, a vivid gleam, shot out from the ebon vault, and a broad blaze swept through the heavens.

It must have been very near another half hour before the gloom was again broken by the lightning. I had gone forward and was leaning over the bows, watching the phosphorescent sparkle of the broken water, when a sharply-uttered "H—st!" from the lookout aroused me, and as I raised my head I distinctly heard a strange sound in the distance—a sound as of rushing waters.

Captain Paine was in a moment by my side. I did not know how long he had been there. We stood by the weather night-head.

"Is this you, captain?" I asked.

"Yes," he answered. He spoke in a whisper and his attention was elsewhere.

"Do you hear that strange sound?" said I.

He listened an instant longer and I heard him gasp.

"Sound!" he cried; "it's a ship!—something!—coming down upon us!"

The lookout was on the point of crying out, but the captain stopped him.

"We must get the men to their stations without alarming them, if we can," he said, and then he leaped aft, shouting, as he went:

"All hands—all hands for tacking! To the braces, every man!"

Captain Paine was again by my side, and we peered off into the darkness. The dull roar was plainly heard, but we could see nothing, we could not even see the head of our own bowsprit. The old sailor groaned in agony.

"If I could only see," he muttered.

At that moment, while yet the words quivered upon his lips, the lightning blazed forth in the heavens and the sea was illumined far and near.

"Heaven save us," burst from Paine's lips, and I echoed the prayer.

Upon our weather bow, and but a few cables' length distant, loomed up the spectral outlines of the hull and spars and the bellying canvas of a heavy ship. She was heading directly across the line of our course and we were dashing toward each other at a fearful rate. During the brief moment of light the captain had been as one paralyzed, but when the darkness had again shut in he started into life.

"Ready about!" he thundered.

And from that instant his orders were given so promptly and so plainly that the men, who had come to realize that their lives were in the balance, made no blunder nor mistake.

"Is she coming into stays?" ground out the captain, with his hands clenched and his teeth set like the jaws of a vise.

As he spoke we heard the foretopsail flap, and in a moment more the staysail had taken the wind on the other side. The order for swinging the main-yards had just been given when the heavens and the sea were again illuminated by the lightning's blaze and a cry of horror went up from our deck.

The ship was now upon our starboard bow, hurling the spray from her sides upon our cathead, and I verily believe that a man upon our forcyard arm might have leaped upon her deck, but she was not upon her course—no, no, thank heaven! She had snuffed the danger and, with her helm hard down, was hauling away from us.

It was dark again—pitchy dark—and while we watched and waited, with hearts hushed to a painful stillness, our vessel was caught as by a mighty grasp. There was a momentary heaving and straining, a low grating, groaning sound, then followed a snap and a crack and—nothing more. Were we free? The answer was at hand.

Another blaze of electric light revealed to us the ship on our quarter, flying swiftly away to leeward. It also revealed to us that our starboard gallant backstay had been carried away. One of the ship's lower yard-arms must have caught it.

On the following morning the storm had passed and the sun had soon chased away the lingering clouds, and I venture to assert that no man ever entered more willingly and gratefully upon the work of repairing damages at sea than did those who were set to splice our broken backstay.

### Moisture Increasing in Idaho.

A study of the meteorological data of Idaho leads to the conclusion that the humidity of the atmosphere is increasing year by year. Never since the settlement of Idaho has there been such an immense crop all over the state as during the past season. The product of grass and grain has been wonderful. Scientific estimates attribute this result to a change in climate produced by the multiplication of irrigating canals, which moisten a great extent of country and create a humid atmosphere. It has been observed that frequent rains now fall during the months of July and August. Nature is closing up the gap between the wet and dry seasons and equalizing the rainfall. Many believe that the time is not far distant when the arid lands will become arable.

## THE ORCHESTRA STOPPED.

**Only the Wickedly Worldly People Were Disappointed.**

The poetic-looking man with long hair and the woman with pale blue eyes were especially interested in the last passages of the play. They sighed deeply and exchanged soulful glances every time the heroine and her best fellow had any trouble.

Worldly people in the immediate vicinity were convinced that the man with long hair and the woman with pale blue eyes were recently married.

The curtain descended upon a thrilling scene wherein several pairs of devoted hearts, rudely held apart by dire and distressing necessity, were reunited.

"R-r-r-rum, tr-tat-tat."

The leader of the orchestra had waved his baton and the drum responded with vigor. The man with the long hair and the woman with the pale blue eyes were conversing earnestly. With ineffable tenderness they gazed into each other's faces.

Worldly people in the vicinity felt sure the man and the woman were speaking in violent terms of endearment.

"Root-ti-toot-too-root."

The trombone had suddenly discovered clear sailing ahead and was snorting boisterously.

"Tant-a-ra-rum."

The cornet had started late, but was making a notable spurt.

The long-haired man leaned closer to the blue-eyed woman.

Worldly people in the vicinity were fully assured that he was talking very loud, and hoped in their hearts the orchestra would stop without warning.

"Tat—"

"Root—"

"Tant—"

The leader had thrown both arms frantically into the air. The drum, the trombone and the cornet knew what it meant. Clamor was instantly succeeded by silence.

The worldly people held their breaths.

"I tell you, cockroaches can't—"

The man with long hair paused, lowered his voice, and proceeded with his conversation.

The Detroit Tribune says that only the worldly people were disappointed.

## LOST LANDS.

**The Submersion of Sangir and of Expedition Island.**

The whole crust of the globe is probably in motion, changing its relative level as it gradually adjusts itself to the contractions of the interior, on which it rests. In the north the circumpolar regions are rising. If we had records to guide us we should probably find that Grant Land, Grinnell Land and Franz Josef's Land are several inches higher than they were when they were first discovered. And simultaneously the coast of Greenland, in the neighborhood of Disco, is sinking, so that stakes which were driven into the beach to moor boats to are now under water. It is easy to understand that, without any volcanic agency, the surface of the earth, resting as it does on a foundation which must be incandescent, must rise and fall as the action of fire expands and contracts it's subterranean support.

This process has gone on throughout all time. In the Arabian Sea, not far from the mouth of the Indus, the voyagers in the Bombay steamships can see, when the water is clear, the peaks and the minarets of a drowned city at the bottom of the ocean. The steamship passes over them as they lie in their watery grave. At some far distant period that city lived and flourished, probably on the ocean border, and may have been a place of trade and prosperity. The hungry waves gradually rose and rose, capturing a street here and a square there, until the people were driven out and the city was ingulfed. It was an illustration on a great scale of the action of the agency which terminated the terrestrial life of Expedition Island.

## THE CORONA OF THE SUN.

**Its Origin May Be Due to Some Electric Manifestation.**

One of the greatest mysteries of science is the magnificent display of coronal streamers and soft banners of light that is seen around the totally eclipsed sun. Several recent investigations tend to show that this wonderful phenomenon is of electric or magnetic origin. M. I. Pupin, of Columbia college has just furnished most suggestive facts bearing on the question through a series of experiments on electric discharges in imperfect vacua.

Photographs of such discharges, made by Mr. Pupin, bear an astonishing resemblance to the solar corona, says Youth's Companion. Inasmuch as the space immediately around the sun must always necessarily contain large quantities of vapors and meteoric dust, it does not seem difficult to conceive that a condition of things exists there which is suited to electric manifestations on an immense scale.

Yet, after all, when we think of the tremendous energy of the sun, which is able to make daylight upon the earth, to warm with its life-supporting rays planets that circle around it at a distance of tens and hundreds of millions of miles and to awaken the magnetism of our globe until the air is aflame with auroral lights, we can hardly wonder that it should cause the nearer regions of space around its own sphere to glow with strange radiance.

### A Quick Shot.

Stranger—Hairtrigger Hank was a quick shot, wasn't he?

Native—Quick shot? Say, stranger, I've seen that fellow fire off his gun, spring a new cartridge into place and bring down the first bullet before it got out of range.

### The Bicycle.

The bicycle was perfected in 1870 according to a well-known authority, and though many improvements have been added since then, they have been more for beauty than anything else.

# OUR ST. LOUIS LETTER.

**The New Union Depot—Effective Closing Up of the Down-Town Pool Rooms.**

St. Louis, Oct. 27.—The birth of a suspicion in the minds of the Board of Public Improvements that the terminal roads which are building the new Union depot intended to gobble up a part of a street has led to a very full explanation of the plans of the company. It was known that the building was to occupy the greater part of a block, and that it was to be the largest affair of the sort in the country, but the full scope of the plans was not understood. It develops now, the structure being half-finished, that its cost will be close to a million dollars, with ornamentation as elaborate as an art museum. Four or five hundred trains a day will pass in and out of the depot when it is finished. The first cars will discharge their passengers in it before the lights blaze in the streets of the city next fall.

There is a far greater demand in St. Louis for expert electricians than can be filled, and good men of this sort are almost naming their own salaries. Gas for lighting, steam for engines, and horses and cables for street cars are being abandoned generally, and electric plants are being put in everywhere. There are two interesting signs of this situation. One is the establishment of a night school for mechanical engineers, where they are taught to apply their knowledge to electric machinery, and the other is the organization of an electrical society, composed of electrical inventors and scientists. This opened its first meeting the other night with a banquet at which there were 108 plates.

The passage of the law by the Missouri Legislature, forbidding betting in the State on races in other States, has had a curious result here. St. Louis has always had one first-class race-track, the one at the fair grounds, which is under the control of the Jockey club. Under the old conditions, too, there was one other out in Forest Park, where amateur trials of speed were had. The new law has brought into existence three more tracks, one in the southern part of the city, where the racing by electric light was done at night last summer; another in East St. Louis, just across the river; and the third across the river, too, near Madison. The company at the back of this last enterprise have built a passenger depot at the foot of Olive street, and run trains over the river every afternoon, while the racing is going on, at intervals of half-an-hour. The great races of the city out at the fair ground's track take place in the spring and fall, and as soon as they stop these other tracks begin their winter racing. On the two tracks across the river, of course, the Missouri law doesn't apply, and the book-makers swarm there to get bets on the Eastern races. The tracks are patronized principally by the St. Louis people, and so the law accomplishes nothing but the breaking up of the pool-rooms in the business alleys down town. This, by the way, was the primary object of the legislators who had it passed.

## ITEMS AND IDEAS.

A Riverside, Cal., man has succeeded in extracting from ten pounds of orange peel oil in the proportion of fifty pounds to one ton of peel.

Ireland has only eight theaters—three for Dublin, one in Belfast, one at Cork, one in Limerick, one at Waterford and one for Londonderry.

There are reputed to be 119,000,000 of the big old copper pennies lying unused somewhere in this country. Few of the old pennies get back to the mint.

On the farm of George Harter, near Yuba City, Cal., there is a mule that came across the plains in 1864, and is still able to do considerable work and is fat and healthy.

Last year there were 1,839 widowers married in New York city, while of widows there were only 1,574 so that about 20 per cent more widowers than widows were married.

A woman has lately been admitted for the first time to the London society of compositors. The society refuses to admit women who are not paid at the same rate as men.

On Martin G. Funk's farm in Manor, Pa., is a pear tree 102 years old. There are pear trees growing about Monroe, Mich., which were planted by the first French missionaries nearly 200 years ago.

The following advertisement recently appeared in the Wiltshier, England, Times: Notice—Baptizing by Rev. A. E. Johnson, Stournore Water, next Sunday at 10:30 a. m. Photographers invited.

The bo-o, the largest flower known to botanists, is found only on the island of Mindanao, the most southern of the Philippine group. Its scientific name is somewhat longer than its native name, the botanist recognizing it as rafflesia schadanbergia. It was first discovered in January, 1889 by an exploring expedition headed by Dr. Alexander Schandenberry. Single flowers of the bo-o weigh from eighteen to twenty pounds.

## GRAINS OF GOLD.

Sham pleasures are the ones that cost the most.

The man who has wealth has a master.

Success anywhere requires singleness of purpose.

There is nothing more frightful than a bustling ignorance.

No man is any stronger than the weak spot in his character.

One of the easiest things to believe is a pleasing lie about ourselves.

The best thing to do when we can not see in any other direction is to look straight up.

If you have never been in adversity you have never found who your real friends are.

The man who is quarrelling with his lot in life is helping to make himself miserable.

The man who puts heart into everything he does is watched by angels when he works.

No man can ever break any of the other commandments while he is keeping the first one.

Getting men to be selfish is one of the principal ways the devil has of getting them to become his.

The difference between a wise man and a fool is that a fool's mistake never teaches him anything.