HOW

METAL STRIPS ARE USED TO WATERPROOF WALLS.—Brick walls of the modern home are not waterproof even though chemically treated, but may be made permanently so through the use of metal strips, it appears from a report to the American Ceramic society, holding its annual meeting in Washington. This radical method of brick construction was presented in a paper prepared by L. H. Minton of New York city.

Under the new method, it was stated, a V-shaped groove three-eighths of an inch deep is molded along the center line of the longitudinal surfaces of each brick as well as in the corresponding position at the ends. Into this groove goes an L-shaped metal strip, of a non-corrosive alloy. The hook of the L fits into the vertical groove on the brick.

As the bricks are laid, the grooves of successive layers meet so that the metal strips, which overlap from one brick to another, form a continuous mesh to re-enforce the wall and keep out the moisture, Mr. Minton said. It was also stated that use of the metal strips made the task of aligning the bricks easier besides giving greater fire resistance and heat insulation.—Kansas City Star.

How Emblem of Piracy Got Name "Jolly Roger"

The word "roger" in the Seventeenth and Eighteenth centuries was synonymous with "rogue," both being derived from the older spelling "roge"; and meant, as it does today, a vagabond, rascal, trickster, thief, etc., and was, therefore, synonymous with "pirate." The word "Rover," which is sometimes used in place of roger as the name of the pirate's flag, had the same root as the word "robber," and a similar meaning to "roger" except that it applied more specifically to wandering rascals. The adjective "jolly" may have been prefixed: (1) In the present sense of merry, jovial, joyous, as an ironical term; (2) in the sense of "small," as a "jolly-boat" is a small ship's boat, the origin of "jolly" in this sense being uncertain; and (3) as a synonym for "nautical" or "marine," in the same way that a marine was called a "jolly." "Jolly roger," once applied to the vessel, would certainly sooner or later be applied to its ensign—a black flag, with white skull and crossbones.

How Stilts Were Evolved

Stilts were originally designed for use in crossing rivers and marshes. As a means of amusement stilts have been used by all peoples in all ages, as well as by the inhabitants of marshy or flooded districts. The city of Namur, in Belgium, which formerly suffered from the overflowing of the Rivers Sambre and Meuse, has been celebrated for its stilt-walkers for many centuries. Not only the townspeople, but also the soldiers used stilts. The home of stilt-walking at the present day is the department of Landes, in Gascony, where, owing to the impermeability of the subsoil, all low-lying districts are converted into marshes.

How Patents Are Issued

Patents are issued in the United States to any person who has invented or discovered any new and useful art, machine, manufacture or composition of matter, or any new and useful improvement thereof, not known or used by others in this country before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, or more than two years prior to his application, and not in public use or on sale in this country for more than two years prior to his application for patent.

How to Drill Glass

A common steel drill, well tempered, or a piece of steel wire heated to a dull red and then quenched in metallic mercury, makes a good tool for drilling glass. Make a solution of 1 oz. camphor, 1½ oz. turpentine and 8 dr. of ether, and keep the end of the drilling tool wet with this. Hydrofluoric acid is the acid used for etching or eating away glass.

How Bees Help Clover

As the humble bees are busy darting from one clover head to another in search of nectar they are no doubt entirely unaware of the service they are rendering to the plants by carrying bits of pollen on their hairy legs from one plant to another. It is said that if it were not for the humble bees the red clover would die out entirely for want of fertilization.

How to Write on Celluloid

When it is desired to write on celluloid articles, such as draftsmen's triangles, it can be done by dipping the pen in acetic acid and using it as ink, says Popular Mechanics Magazine. Writing done with this acid will, when dry, have a dull appearance on the surface of the celluloid.

How Nitroglycerin Burns

Nitroglycerin burns quietly in the open air, but is exploded by percussion or by heating in a closed vessel. It produces by detonation about 10,000 times its own volume of gas.

Serpent Big Figure in Mythology and History

Considering that the serpent, alone among the lower creatures, can travel with speed upon land or upon water, can climb trees, swallow other creatures of much greater girth than itself, go without food for incredibly long periods, has eyes protected by a very strong horny substance, so that it can squeeze itself into stony crevices without damaging its eyesight, possesses the ability to fascinate birds and small animals so that they are helpless to make their escape, can inflict death by a bite, etc., it is not to be wondered at that it figures largely in ancient mythology and history, as also in Biblical lore.

Egypt, India, Africa found place for it among their gods. At one period in their history the Israelites also paid it divine honors (II Kings 18:4). In tropical countries where it is found in greatest number and widest variety, it is the dread and curse of the countryside, and fear is often an elementary ingredient of natural religion.

Mesopotamia, the original home of the human race, is especially infested with serpents, sometimes in numbers almost incredible, the mouth of the Euphrates in some flood seasons being a great moving mass of the horrifying creatures.

Old English City Gives December Odd Welcome

December, writes a Manchester (England) Guardian columnist, is not the kind of month, one would imagine, whose entry would normally be singled out for a civic welcome but in Colchester from the earliest times it has been the custom for the town crier to perambulate the streets at midnight on November 30 to give an official welcome to December in the cry—

Past twelve and a fine (or wet) morning.
Cold December hath come in,
And poor men's backs are clothed thin
The trees are bare, the birds are mute;
A pot and a toast would very well suit.

When Colchester, in step with the march of progress, some time ago abolished the office of town crier fears were entertained that this time-worn custom would lapse. But, though robbed of the honor of official recognition, the ancient ceremony still is faithfully performed by the former town crier, now acting, as it were, in a freelance capacity. The origin of the custom has been long forgotten, but it is known to be of great antiquity and is said to be without parallel in this country.

Died of Newspaper Diet

That the fallow deer in captivity have some quaint tastes in the matter of food is shown by the fact that one of these animals in the London Zoological garden died from eating waste paper, the post mortem revealing that the stupid creature had consumed 16 pounds of newspapers and paper bags.

Snakes occasionally indulge in cannibalism, but appear none the worse for it. A hamadryad accidentally placed in quarters occupied by a number of cobras, promptly ate several of the latter and lived to ponder on the deed. Incidentally, the society also pondered somewhat deeply on this deed, for the cannibal's meal cost several hundred dollars.

Another queer meal was attempted by a python who did his best to swallow a blanket but discovered that the unwonted task was beyond him when he had engulfed half of the material.

More Hairy Than Apes

Scientists state that human beings, generally, have more hairs on their heads than some of the apes. The average number of scalp hairs a square centimeter was 312 for man and 307 for thirteen specimens of the large anthropoid apes. Gorillas are less hairy-chested than many men. Two adults had only six and three hairs, respectively, a square centimeter, whereas a man—not a very hairy-chested one at that—had nine. Scalp hair varies in density among the human races, it appears. Six adult negroes averaged 297 hairs a square centimeter and three adult white men had a few more, with an average count of 333.

Delicate Vocal Chords

A prominent throat specialist states that there are numerous cases of babies who make sounds like those of a dog barking and the characteristic sharp whine of the seal. But usually, he adds, such phenomena are due to a form of hysteria and are not permanent. Any growth, no matter how slight, on the laryngeal area, or any splitting or paralysis of the vocal cords, immediately alters the tone and pitch of a person's voice. Singers have to exercise the most scrupulous care of the throat, because even a minor injury to the vocal cords seriously impairs the quality of the voice —Detroit News.

National Revenue

The proportion of public revenue raised by taxation and borrowing varies with the times. In peace time the United States has raised 100 per cent of her revenue by taxes, believing in the theory of paying as you go. During the World war about 75 per cent was raised by loans and 25 per cent by taxation. At one period in the national history—from about 1830 to 1870—considerable revenue was realized from the sale of public lands. The amount so realized now is a small decimal.

WHY

Boron Presents Problem to Engineers

The agricultural engineer brought water to the desert places in southern California and Nevada and the "desert blossomed as a rose." This accomplished, the years intervening have brought a new problem, and now the engineers must do something about the water flowing through the channels of some of the projects.

It has been found, after some years of operation, that the water being supplied has a fairly large content of boron, an element beneficial to plant life in small quantities, but decidedly injurious when present in too great percentages.

The continual evaporation of the water over a period of years has left deposits of boron, which already have had ill effects upon the plant life fed by the water.

The engineers are faced with one of two solutions, either mixing the water with boron-free water or else locating and cutting off the sources of the boron, a difficult task in the latter case, for some of the sources of irrigation water come from underground streams.—Washington Star.

Why Steam-Driven Plane Does Not Appear Likely

There is news that an inventor has perfected a steam engine intended for driving airplanes. Curiously enough, this is a reversion to the earliest days of flying, for one of the first planes had its propeller driven by a steam engine.

Wonderful claims are made for the new engine, and it remains to be seen whether they can be substantiated. It is stated, too, that its boiler is heated by means of crude oil and that it consumes so little fuel that it could remain in the air for nearly a month at a time. This seems scarcely possible.

The inventor claims that his engine will develop one horse power for each pound of weight, and that it will enable a plane to ascend to a height of ten miles or more. So far it has been tested only on the ground, where its performances have been satisfactory. Soon, though, it is to be taken into the air by a well-known pilot.

Actually, it seems unlikely that the steam engine can beat the petrol motor, for besides fuel for its boiler and oil for its working parts it must carry large quantities of water, and water is very heavy.

Why Ball Revolves

In three more decades a polished granite ball, weighing more than 500 pounds, atop a monument in Elmwood cemetery, Salem, N. H., probably will have turned a complete revolution without the touch of human hands. The customary dowel pin was omitted in putting the ball on the monument. As a result, winter weather already has turned the ball over 14 inches, about a quarter of its circumference, in the last ten years. Ice forming in the saucer-like base lifts the ball slightly. The sun naturally melts the ice to the east of the ball first, causing it to settle to that side, thus shifting.

Why Russia Exiled Jews

Exile to Siberia was not decreed by the czarist government of Russia actually on account of Jewish affiliation, excepting that the Jews in Russia were largely suspected of political intrigue and of insubordination. This, added to the dislike of the Jewish race as a whole, served to render it practically impossible for a Jew in Russian courts or before any tribunal to prove his innocence of crimes attributed to him. All political offenses—and this covered practically all offenses, if desired—were punishable by exile.

Why Ring Around Moon

The ring around the moon is a halo. While all halos are due to ice crystals, some are caused by the refraction of light passing through the crystals and others by the reflection of light from their surfaces. The differences in shape and the positions of the crystals account for the great variety of halo forms. Those caused by reflection are white; those by refraction are colored.

Why Clap of Thunder

Thunder is caused by a vacuum, points out Nick Sprank in Modern Mechanics and Inventions Magazine. When lightning rends the air, a partial vacuum is formed by the great heat. The air rushes in to fill the space and causes a thunder clap.

Why Plants Are Sweet

The principle in sugar-yielding plants which produces the sweet taste is a chemical substance known as sucrose, and is the same regardless of the type of plant from which the sucrose is extracted.

Why Rats Are Useful

One reason for the rat's usefulness in scientific experiments is that a week in a rat's life is about equal to a year in the life cycle of a human being.

Why Shoes Are Forced Off

When a person falls from a great height or is involved in an explosion, the shoes are forced off the feet by the pressure of the air.

Why Diamonds Are Cold

Diamonds are cold to the touch because they are good conductors of heat.

Why Called "Riflebird"

The riflebird is so called because its cry resembles the whizzing and striking of a bullet.

Says Maya Civilization Choked Itself to Death

A new explanation of why the great Maya civilization of Central America, undoubtedly the highest of prehistoric America, suddenly faded and vanished without any obvious reason was suggested to the Washington Academy of Sciences by Dr. C. Wythe Cooke of the United States geological survey, the Literary Digest reports. Says Dr. E. E. Free, in his Week's Science (New York):

"The Maya civilization choked itself to death, Doctor Cooke believes, with mud washed from its own hillside corn patches. The former Maya country is marked today, Doctor Cooke reports, by many small, flat plains of sticky clay soil, almost impassable in wet weather. Each of these plains, he believes, once was a small lake, these lakes being connected by streams or by short portages forming a system of water highways as the lakes of North America once did for the canoes of the Indians. The Maya cities, he believes, were built near these lake highways, and maintained by this easy form of transportation. On nearby hillsides, the theory continues, the Maya farmers grew the corn, which was their chief food. In so doing they cut or burned the natural hillside vegetation. The result was that every violent rainstorm washed a part of the hillside soil down into the lakes. Slowly the lakes filled up and the hillsides grew bare. The filling of the lakes blocked the waterways, while erosion of the hillside soils ruined the farms and lowered the nation's supply of food. Finally, Doctor Cooke believes, the entire Maya nation was forced by poverty and famine to migrate to new homes in Yucatan, which is what the historical and other records show that they did."

Witch-Hazel Not Alone Useful as Divining Rod

The witch-hazel derives its name from the magic powers attributed to the slender branches of this small tree or shrub. Many believe that a small branch of the witch-hazel if held lightly while being carried along over the ground will turn toward the earth at a spot where water or gold may be found by digging. It is this divining rod characteristic which has brought it fame.

The witch-hazel, however, has some real value to mankind, for from its bark comes a medicant used in liniments for external application. The bark and leaves, which are similar to the leaves of the ordinary hazel, are a source of tannen, which is used in preparation of leather.

The tree is usually found in damp forests where its scrubby growth is stimulated. It is a two-year tree so far as bringing its flowers into bearing, for the clusters of yellow flowers which appear in the fall do not develop into seed until the following spring.

Crown Is Not Old

At every opening of the British parliament the king's crown is brought from the tower of London to the throne room in St. James' palace for the occasion, says the Montreal Family Herald. For this journey it has an escort of yeomen of the guard, and when it is next conveyed to the robing room at Westminster, it is escorted by the household cavalry. It is generally supposed that the imperial state crown of England is one which has been handed down a long line of kings. In fact it was made in 1838, principally of jewels taken from old crowns. It contains a large ruby and a large sapphire, 16 smaller sapphires and four smaller rubies, 11 emeralds, more than 1,000 brilliant and rose diamonds, 147 table diamonds, four drop-shaped pearls and 273 pearls.

Resourceful Prophet

The identity of the present "Old Moore" of almanack fame is carefully hidden, but "I am informed," writes Peter Simple, in the Morning Post, "that the tombstone of the original 'Old Moore' is to be seen on the side of the south porch of St. Mary's parish church, Bexley, Kent." The story goes that "Old Moore" was a resident of that village who made a practice of foretelling some important event for each month of the following year. On one occasion he was in difficulty to prophesy anything for the following July, so he wrote that snow would fall that month—which it did—after that, his reputation as a seer was made.

The Oldest Habitation

More of the early history of man has been learned in the past 75 years than in all the centuries preceding, and all parts of the world are now being searched by anthropologists for traces of early man.

The oldest house in the world is a cave near Castile, Spain, according to Dr. F. W. Blackmar, of the University of Kansas. Remains of 13 different races that lived in this cave as far back as 100,000 years ago have been found.

A Dig at the Digger

Mercenary May, the many times divorced film star, was entering the marital state once again. She decided to mention the fact to her director.

"Of course, you will understand that this time I'm marrying for love and nothing else," she volunteered.

The director smiled knowingly.

"How romantic!" he said. "So at last you have decided to go off the gold standard."

TRAFFIC MAY NOT MOVE ON YELLOW

"Shooting the yellow" traffic light is becoming a common practice among motorists, according to the traffic experts of the bureau of highway patrol and safety of the department of revenue. This practice is not only dangerous but contrary to the law, it is pointed out.

The Pennsylvania vehicle code is quite clear on this subject. The code provides that when yellow is shown along traffic facing the signal must stop before entering the intersection. It forbids movement of traffic, except the traffic within the intersection when the yellow first shows, and making a "U" turn on a two-way street back of the intersection, when such a turn is indicated by proper signs. These are the only exceptions.