

NEWEST SCIENTIFIC DISCOVERIES & REMARKABLE FACTS

WORLD To BE ALL LAND Some DAY

RECENT study of Mars has proved the theory that some day the land area of the world will be equal to the water area. So it is with Mars, and conditions on the two planets are so similar that the evolution of Mars can now safely be taken as an indication of what will occur on this earth in the millions of years to come. Then will North America be joined with Asia and all land connected.

That this is certain to happen is known through the fact that Mars and the earth, more closely similar in size and climatic conditions than probably any other known planets, are following the same lines in their slow but sure process of evolution. On Mars already has the land area caught up with, if it has not surpassed, the water surface, although at one time both planets were but gaseous clouds, which later were transformed into huge masses of water around a solid core. When land appeared above the waters it spread until now, as has been said, its area is equal or greater than the water area of Mars.

The earth is bound to follow the same lines of evolution, although, as the earth is larger than Mars, its development is certain to be slower. It has been figured that, while the earth is older in years than Mars, its development is younger, due to the difference in size. The smaller Mars, transformed from a watery to a solid surface, is now in such an advanced condition of development that it is impossible to determine whether life still exists on our far-away neighbor. Atmospheric conditions would seem to render the existence of life impossible, but then the changing colors of the surface of the planet tend to indicate that life, or at least vegetation, is still flourishing.

BELTS Cause Appendicitis

DR. MAYO, of Rochester, Minnesota, points out the interesting fact that within the last five years operations for appendicitis have increased over 300 per cent, and he says that this alarming condition is due to the practice of wearing belts instead of suspenders.

Midnight GOLF

GOLF fans in England are so afraid they will miss a game that midnight golf has come into vogue. This is made possible by auto headlights. In a game which took place at Bisher, Hall and the four players were attended by a "lamp caddy." The rays of the lamp were trained on the direction to be taken by the ball. Many of the holes were done in bogey or less.

What ZERO Is

THE "greatest degree of cold," or "absolute zero," according to scientists, is 459 degrees below zero on the Fahrenheit scale. This figure may not be absolutely accurate, but it is the lowest conceivable temperature compatible with scientific knowledge.

Above this degree of absolute zero all matter, either solid or gaseous, is in a state of vibration corresponding to the degree. At absolute zero all such vibrations would cease and all gases would liquefy.

Folding Stove!

A GAS stove that folds into a recess in the wall will soon be within the reach of any housewife who likes to have her kitchen always looking spick and span. The new contrivance is the invention of a Los Angeles man. It will be especially useful in city apartment houses where miniature kitchens are the rule.

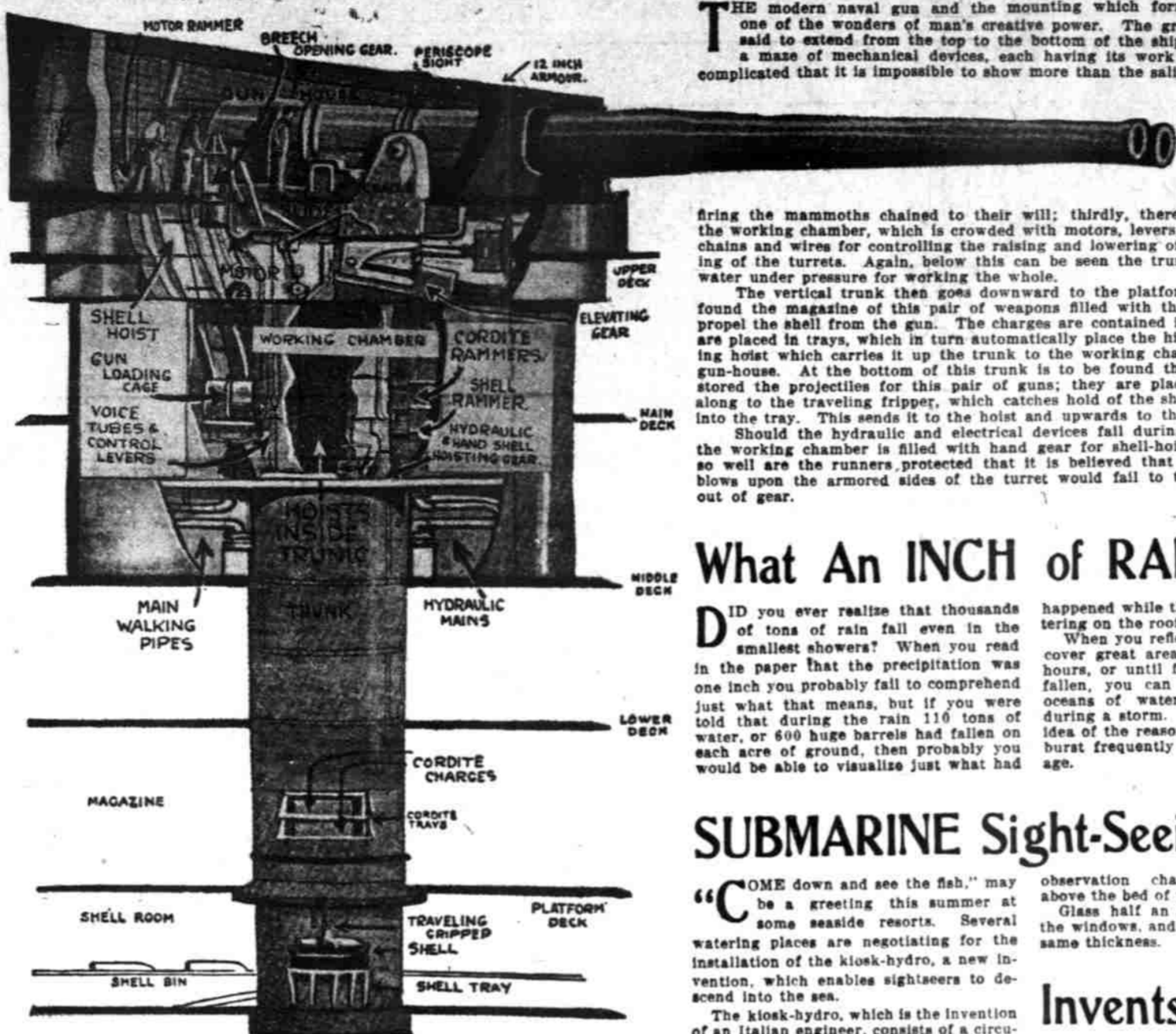
DRUNKARDS Are Now BEING CURED By BEE STINGS

ACCORDING to the recent testimony of various doctors and their patients some really wonderful cures of rheumatism and sciatica have been effected by the sting of the bee. In one case a person crippled by rheumatism for fifteen years was completely cured after he began to keep bees and was continually stung by them, while in another case a lady who had been crippled for four years by an attack of rheumatic fever had bee stings applied to the various affected parts and within a fortnight the stiffness and pain left her feet, ankles, elbows and finger joints.

And there are several authentic cases of people over eighty years of age who have suffered for years from rheumatism being completely cured by this novel remedy.

The explanation lies in the fact that the bee, when it stings, injects a large quantity of formic acid into the body. This acid, as has been shown by experience with hundreds of cases, is the best antidote for the poisons in the system

The INNER WORKINGS of a Modern BATTLESHIP GUN



SECTIONAL VIEW THROUGH THE GUN-HOUSE AND DECKS BELOW

THE modern naval gun and the mounting which forms its cradle constitute one of the wonders of man's creative power. The great steel citadel may be said to extend from the top to the bottom of the ship's hull, and inside it is a maze of mechanical devices, each having its work to do, so intricate and complicated that it is impossible to show more than the salient portions.

Primarily there are—first, the guns, of which our ships carry two in each turret; secondly, the gun-house, in which the men are to be found loading, laying and firing the mammoths chained to their will; thirdly, there is situated below this the working chamber, which is crowded with motors, levers, tubes, air bottles, bells, chains and wires for controlling the raising and lowering of the guns and the turning of the turrets. Again, below this can be seen the trunk mains that carry the water under pressure for working the whole.

The vertical trunk then goes downward to the platform deck, where is to be found the magazine of this pair of weapons filled with the cordite charges which propel the shell from the gun. The charges are contained in fabric bags, and these are placed in trays, which in turn automatically place the high explosive in a traveling hoist which carries it up the trunk to the working chamber and thence to the gun-house. At the bottom of this trunk is to be found the shell-room. Here are stored the projectiles for this pair of guns; they are placed in bins which work along to the traveling tripper, which catches hold of the shell and swings it around into the tray. This sends it to the hoist and upwards to the gun-house.

Should the hydraulic and electrical devices fail during the stress of a battle the working chamber is filled with hand gear for shell-hoisting and so forth, and so well are the runners protected that it is believed that a series of point-blank blows upon the armored sides of the turret would fail to throw anything seriously out of gear.

What An INCH of RAIN Means

DID you ever realize that thousands of tons of rain fall even in the smallest showers? When you read in the paper that the precipitation was one inch you probably fail to comprehend just what that means, but if you were told that during the rain 110 tons of water, or 600 huge barrels had fallen on each acre of ground, then probably you would be able to visualize just what had

happened while the little drops came pattering on the roof. When you reflect that rainstorms often cover great areas and extend for many hours, or until four or five inches have fallen, you can imagine the enormous oceans of water that are precipitated during a storm. You can also get a fair idea of the reason why a so-called cloudburst frequently does such fearful damage.

SUBMARINE Sight-Seeing NOW

"COME down and see the fish," may be a greeting this summer at some seaside resorts. Several watering places are negotiating for the installation of the kiosk-hydro, a new invention, which enables sightseers to descend into the sea.

The kiosk-hydro, which is the invention of an Italian engineer, consists of a circular steel observation chamber, in the walls of which are double water-tight windows. Above these windows are electric lamps of 10,000 candle power, fitted with reflectors, and capable, it is claimed, of projecting light a distance of 1,500 feet when the water is clear.

The chamber has a sloping roof which narrows into a steel tube, through which two staircases, one for descent and the other for ascent, lead to the water level. The upper part of the kiosk-hydro may either take the form of a floating kiosk, rising and falling with the tide, and connected with a pier by a gangway, or it may be part of the pier itself, with the

observation chamber suspended just above the bed of the sea. Glass half an inch thick is used for the windows, and the steel shell is of the same thickness.

Invents LOCK For BOTTLE

A BOTTLE stopper that may be locked with an ordinary padlock will prove a boon to drinkers who prefer to keep their rare old liquors and vinegars for their own use rather than to make a holiday for the servants.

A Frenchman is responsible for the scheme by which a metal cap may be fitted over the bottle and the contents secured against intrusion.

GREEN Animals A PUZZLE

WHAT makes some animals green? If any reader knows and will tell he will settle a big dispute now going on among scientists, who have vowed to find out.

Green colorations belong chiefly to insects, worms and reptiles. Whether they get their green hue from the plants they eat or not is a question that has not been conclusively settled, although it has been shown that they will retain their color even when denied all green food.

COAL Mining MACHINE Does WORK of HUNDREDS of MEN

A MACHINE that will go into a coal mine and take the place of hundreds of workmen has just been perfected by a Pittsburg man. The machine, which is now being quietly used in one of the largest mines in the Pennsylvania coal district, takes the coal from the face of the seam and loads it on cars, keeping laborers busy taking away the cars.

For years such a machine has been the dream of coal mining companies. It has been needed to solve the increasing problems of coal mining, such as mine disasters, increasing cost of labor, the grow-

ing expenditures for mine equipment, miners' homes at the mines and countless other outlays, of which the average citizen has little realization.

The new mining machine is the development of entirely new principles in mechanical mining. It is the product of H. A. Kuhn, of Pittsburg, mining and mechanical engineer.

In the early years of his experiments he spent his time discovering fundamentals. He sought a principle upon which a machine would work. He made this a success, and from it built an economical, practical, cheap and "foolproof" machine that does all the work of the human miner; only it does it twenty times as fast and 50 per cent cheaper.

As the machine stands, it is a structural steel frame, oblong in form, which rests on a steering truck which rides on the floor of the mine. It carries motors for operating the cutting tools and the tools themselves, and it attacks the coal seams in any position, moving up and down, sidewise or in any direction the coal seam leads. It also removes the roof slate when necessary.

Electricity or compressed air can be used in operating the motors, and so little power is required that the cost for this item alone is less than 1 cent per ton of coal mined. One peculiar feature of the machine that impressed the spectator is that it seems to be fully as flexible as the human coal miner. It is estimated that

the machine will cut the cost of mining in half.

From the time the machine takes the coal from the seam, cuts it, places it on a conveyor and loads it in a pit car no human hand touches it. With twenty ordinary laborers ten of the machines will produce 1,000 tons of coal a day, as but two men are needed to operate a machine.

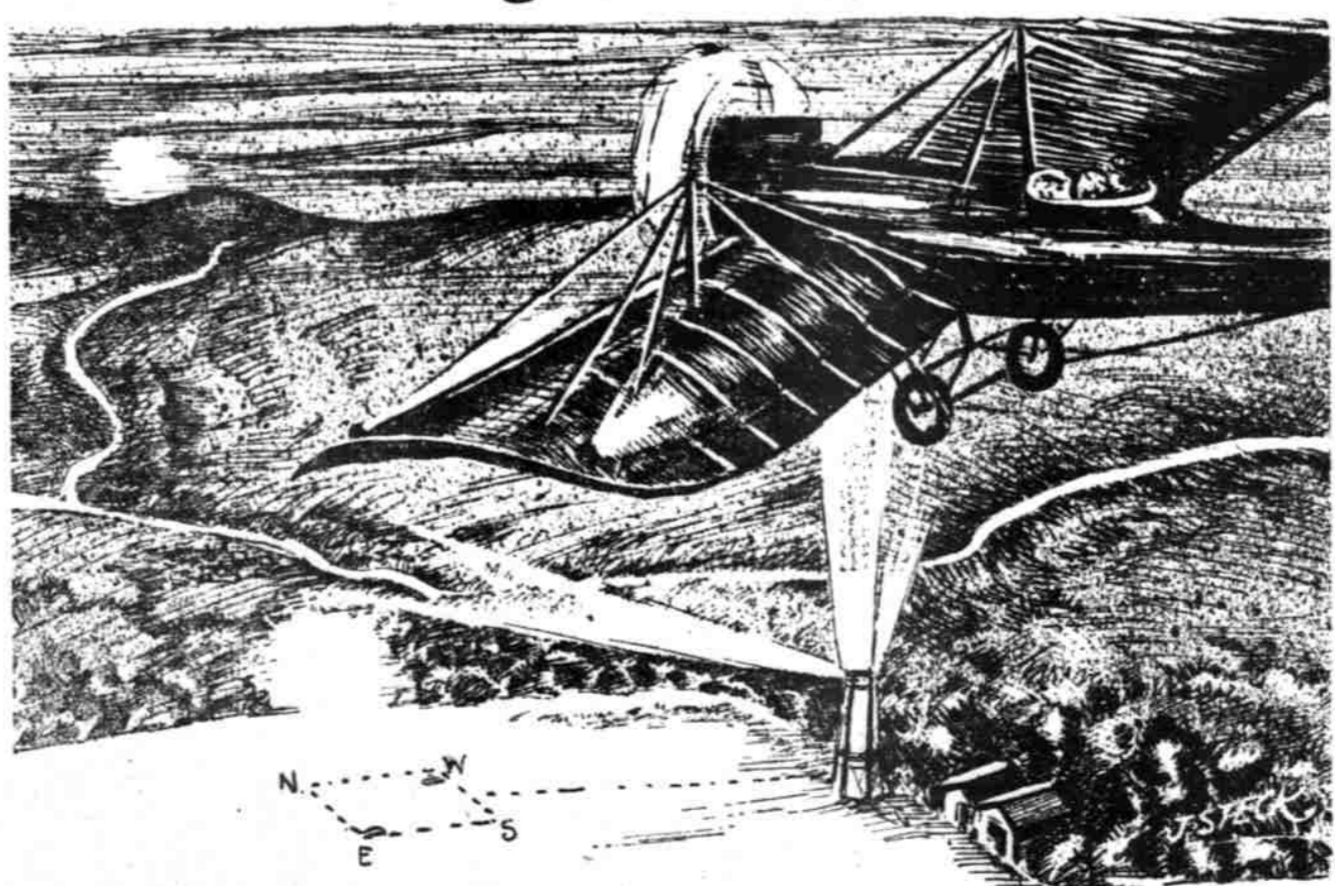
More than this, the machine cuts the coal cleanly from the roof to the floor of the mine, leaving both as even as a billiard table, and it takes out in excess of 90 per cent of the coal in the ground, while the best practice of today seldom goes better than 70 per cent of the coal, the rest being lost because of the too great effort to extract it.

SOME Fish!

A FISH that can spit far enough to knock a fly off a log is a curiosity much enjoyed by sportsmen who have explored the fresh waters of Japan and the Asiatic coast.

This finny species would make fine pets in any home, for, in addition to keeping the parlor rid of flies, they would furnish much amusement for the family and visitors through their marksmanship. In their native streams the fish are often seen to slip up on a fly, squirt a stream of water, and then promptly snatch the prey as it falls into the water. Some parlor trick, eh?

FLYING AT Night Is NOW Made SAFE



NIGHT-FLYING in aeroplanes guided by beacon lights and turning-plates has recently become the fashion among German aviators. The beacon lights, used to pilot the aviators to a safe landing, have an unusually strong voltage, throwing their light to a distance of thirty miles straight up into the air. The turning-plates are set in the middle of

the ground of the aerodromes and work automatically. The letters show the four points of the compass. Fires are used to show the aviators the direction of the wind. These advantages for landing safely have made night flying a success.

The flying machines are equipped with all of the needed light to prevent accidents on account of being unable to see.

On each of the wings are two lights similar to bicycle lamps attached to the extreme edges throwing their light toward the driver and illuminating the wings. Above the driver's seat is attached another light which enables the aviator to see to work his engine. Near the propeller is another strong light which reflects toward the driver.

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UDO, Jap VEGETABLE For JADED APPETITES

GOOD morning! Have you had your breakfast? No, it's not a new patent breakfast food, but an old vegetable, but recently transplanted to the Western world. Udo has been a standard food in Japan since the annals of the Nipponese were begun. It has just been brought to this country, and success has attended its cultivation in California, and it is predicted that before many years it will be as essential to the family garden as radishes or early onions.

Udo is described as of delicious flavor when properly prepared for the Western palate. Like a great many Oriental foods, its original or untouched flavor is a little too strong for our consumption. However, by the process of bleaching, the flavor is somewhat tamed, and a further process of soaking in water is said to remove the last objectionable features.

The Japanese vegetable more nearly resembles the taste and appearance of asparagus than any of our other standard plants. Its growth also is somewhat similar. To make udo perfectly palatable to Western tongues, artificial bleachers are installed among the growing plants.

After the bleaching process, the plant is cut and allowed to stand in water until the strong Oriental flavor is removed. Then the plant is prepared in various ways. It makes delicious salad, can be eaten as are asparagus tips and is a decided addition to many kinds of soups. One great advantage of the udo is that the entire stalk is eaten, not the tip only, as in the case of asparagus.

INSECTS Go Into TRANCES

SOME insects have fits. They go into trances of a cataleptic nature, and remain in that state for periods that last for many hours. Professor Peter Schmidt, of the Imperial University, St. Petersburg, has been observing this phenomenon in some specimens of an Asiatic species of "walking stick," which remains absolutely motionless throughout the day with its forelegs close together and extended in front of it. Professor Schmidt tried experiments with these sleeping insects and found that when distorted into extraordinary positions they would retain these for a long time.

He stood them on their heads, and they remained so for more than four hours. He placed them bridge-like across the gap between two books, and weighted them till their bodies bent like bows. He bent them backward and supported their two ends by stones. In such attitudes they rested for several hours. He cut off legs and heads; he sliced their bodies and they never gave a sign that they felt the injury. Their muscles, he says, were in a condition of slight contraction, but perfectly plastic and without elasticity; they were not subject to fatigue and not sensitive to pain.

Professor Schmidt tried in vain to hypnotize his insects when they were in the active state. He found it very difficult to awaken them from their trances, succeeding only by prolonged excitation of their nervous systems, as with electric shock or sharply pinching the tail.

The "walking-sticks" go into their trances in the morning, and normally wake up when the twilight begins. What causes the daytime trance and the nighttime waking activity he has been unable to discover. He is convinced that many other insects are in a cataleptic state when they are believed to be asleep. The object of these periods of immobility is to make the insects appear as nearly as possible a part of their surroundings.

The "walking-sticks," for example, rest all day upon twigs. They look exactly like twigs and away in the wind as if they were a part of the branch. Thus they are safe from birds that would like to eat them. At night they are able to walk about and search for their food, secure from the attacks of their natural enemies.

ORIGIN of HAT Raising

WHY do men raise their hats? When a gentleman raises his hat he does it simply as a mark of respect, but the custom originated long ago in the time when men wore heavy armor. When knights went to war (and that seemed their chief business), they wore heavy steel armor from head to toe, to protect them from the spear thrusts of the enemy. The head and face also were covered, with a place to breathe through and two little holes to see through. The only way one knight could be distinguished from another was by the plume on his hat or the crest he wore, each family having its own particular mark. Naturally when a knight came into a castle he took off, for comfort, the armor covering of his head, and so originated the idea of tipping the hat, which in this day has become a common mark of respect to ladies.