

NEWEST SCIENTIFIC DISCOVERIES AND REMARKABLE FACTS

Waves Cause Destruction of Great Many Islands

SO accustomed have we become to false rumors of the disappearance of islands or the sinking of portions of a seacoast, at the time of earthquakes or volcanic disturbances, that we are inclined to regard all reports of such phenomena with skepticism. That certain islands and headlands in Chesapeake Bay are being destroyed at a startling rate, not by any catastrophic forces of nature, but by the ordinary action of waves and currents, is demonstrated in a short report just published by the United States Geological Survey. "Erosion and Sedimentation in Chesapeake Bay Around the Mouth of Choptank River."

This report is a result of a comparison of a portion of two separate topographic and hydrographic surveys of Chesapeake Bay made by the United States Coast and Geodetic Survey, one in 1847-1848 and a second over half a century later, in 1909-1901. A third supplementary topographic survey of a part of the area studied was made in 1910 by the author of the report, J. Fred Hunter, together with C. C. Yates, of the Coast and Geodetic Survey.

The results of the work are of unusual interest because they give accurate quantitative data on the amount and rate of erosion and sedimentation in a representative area of the bay. The most interesting feature of the study is the rapid destruction of the three islands at the mouth of Choptank River. Of these, Shapps Island, which a generation ago was a summer resort and a favorite hunting-ground besides supporting a number of families throughout the year, is today deserted and almost barren of life. Its 438 acres of 1848 had dwindled to 91 by 1906, while at the time of the most recent survey, in 1910, the island contained but 53 acres. Its north shore having suffered the phenomenal loss of 110 feet a year during the period from 1909 to 1910.

Calculations by Mr. Hunter indicate that the island will be entirely effaced before 1959. James Island, which lies south of Shapps Island, decreased in size from 978 acres in 1848 to 490 acres in 1910, while to the north, Pilehman Island, which supports many prosperous farmers and fishermen, was reduced from 2015 acres in 1847 to 1688 acres in 1909 and is now surrendering approximately six acres each year to the sea.

On Shapps Island the site of an artesian well has been transgressed by the waves so that it now presents the unique feature of a well located in the bay. The map of 1901 showed that the only remainder of the north end of the James Island of 1848 was a small island situated on the spot which was formerly an arm of an inlet, but which later became filled with marsh material. That the water in the midst of land in 1848 should become land in the midst of water in 1910 is a remarkable feature of the greater resistance of the marsh-built land.

Practically all of the erosion has been on the west and north sides of the islands, which are most open to the attack of the southerly bay currents and the westerly winds and their waves. No building up of land is going on within the area studied, although farther south extensive delta deposits are being laid down.

Our Muscles Laugh, Is Doctor's Discovery

NOW let's have a good laugh over this apparently foolish assertion, and then, when our merriment has subsided, let us calmly reflect, to see if the theory is plausible.

Here goes: Dr. Leonard Keene Hirschberg, A. B., M. A., M. D., of Johns Hopkins University, who knows what

he is talking about if anyone does, says it is absolutely impossible to appreciate wit and humor without muscular movements.

After a thorough investigation, Dr. Hirschberg, in a recent article, declared that the stimulus which gives rise to the emotions grouped under the names of pity and humor really causes muscular movements first. These produce the mental states known as pathos, wit and cuteness.

Proof of this discovery, he said, is found in the fact that persons whose facial muscles are wholly paralyzed cannot see a joke. Stolid-faced Englishmen, as well as persons whose cheeks and mouth muscles are seriously burned or scarred, fail to see the points of definite and open jests.

On the other hand, he declared, the rough and ready muscular active movements of slap-stick comedy acts on the vaudeville stage are even funny to paralytics and idiots, for the observer really laughs at such gyrations by way of his neck, head, stomach and arm muscles. In a word, the doctor declared, the coarser the fun the larger the muscles that laugh.

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Comfort for Humans Is Now Measured

HUMAN comfort is now measured and automatically regulated. A clever device in the form of a bridge placed in a room insures comfort to the human occupants. One end of the bridge is electrically regulated to correspond with the temperature of a person's body. When the temperature in the room corresponds to the temperature of the occupants, the bridge is nicely balanced, with the indicator gently oscillating.

Should the temperature of the room fall below that of the occupants, the bridge is inclined to sink at one end. This end is attached to a heat regulator and automatically more heat is turned on. Should the temperature rise above that of the persons in the room a reverse action is mechanically started.

The indicator moves violently when the air becomes too cool and when the heat gets oppressively hot the pointer moves with a slow, monotonous regularity that warns the human beings present. At the same time the automatic heating device is set in action, so that conditions are soon remedied.

Russian Scientist Tries Cure by Freezing

FREEZING patients to death to cure tuberculosis sounds a great deal like the suggestion that two bullets through the head will cure almost any disease, but that is precisely the remedy offered in all seriousness by the great Russian scientist, Bachmetieff, after experimentation with animals, in which he demonstrated his theory was workable.

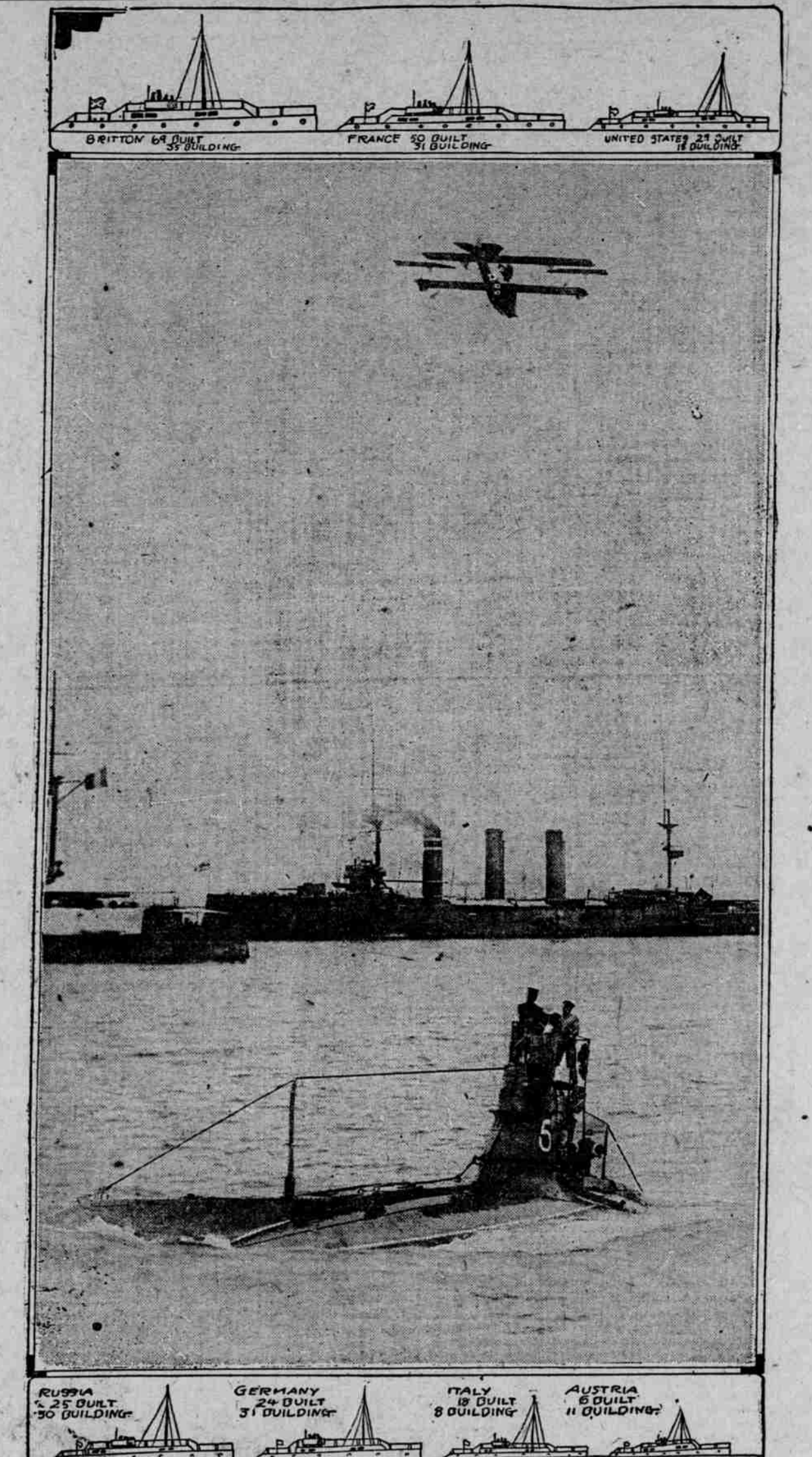
The Koch bacillus is killed at 6 degrees centigrade below freezing point, so that by congealing the human body to that degree the Russian expects to kill all the tubercular germs, then he proposes to bring the subject back to life by gradual re-heating.

He has already been highly successful with rats and other animals by producing artificial respiration in them while the process of freezing was going on.

Electric Range Economical.

An electric range displayed recently in the windows of the electric light company at Salt Lake City, Utah, was operated continuously, both day and night, for a week at a total cost of 10 per cent. The stove contained one oven, the temperature of which was \$1.18. This figure was based on energy at 4 cents per kw-hr with a discount of automatically controlled by a thermostat device.—Electrical World.

Do Aeroplanes and Submarines Make Modern Warships Useless?



Photograph Showing Aeroplane Hovering Over Dreadnaughts, With Submarine Lurking in the Foreground.

WARSHIPS are useless in time of war.

Such is the astounding conclusion reached by some of Europe's greatest students of war. The battleship is all right in times of peace, it is imposing and looks fine in a naval display or parade, but it is now obsolete as a fighting quantity.

In the air above and in the waters below the huge battleship has met its doom. Aeroplanes whirl across its deck, many thousand feet in the air, and drop bombs which, exploding, carry death to those who are manning the leviathan and carry destruction to the instruments of war with which the big boat is fitted.

And then in the waters below the little submarines whirl about, discharging their deadly torpedoes in the very vitals of the battleships.

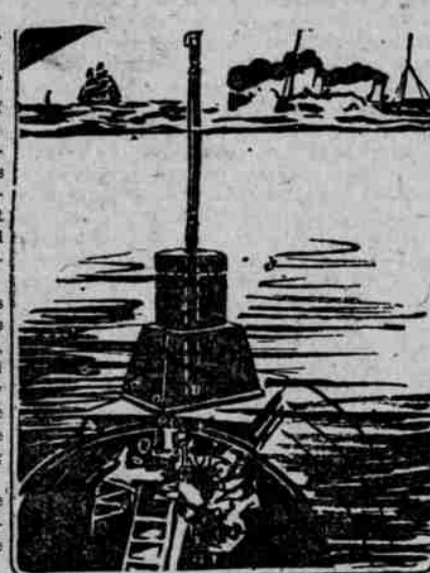
So, the war students argue, the battleship is useless, obsolete for the very purpose for which it was evolved. The mightiest sea monster, costing from \$12,000,000 to \$15,000,000, is helpless, vulnerable to destruction from a frail aircraft costing a few thousands or a tiny submarine representing a total outlay of a couple of hundred thousand dollars.

The exact status of the aeroplane in a big war has not yet been determined, but experiments have shown that from a height of several thousand feet, far enough to easily avoid any missiles shot upward from the comparatively slow moving battleship, bombs can be dropped with deadly accuracy to the decks of the water craft. The movements of the battleship, too, cannot be concealed from the watchful eyes of the birdmen.

Eyes should the bombs fall to destroy the approaching sea monster, the enemy in the aeroplane would give warning of the approach of hostile ships, and forewarned is forearmed. Half the efficiency of a battleship's action is dependent on the suddenness of its approach. Surprise has always been a controlling factor in war and with a flotilla of airships on watch, there could be no surprise attack from a fleet of battleships.

Many political leaders in Germany who are convinced that the days of wars are over, or ought to be, argue that the immense sum could be utilized with great effect in some humanitarian cause.

They insist that the grim tower standing there, dedicated to warfare and wanton strife, is a sad example to set before the nation and the world in these enlightened times.



THE PERISCOPE OF THE SUBMARINE ENTAILS THE OFFICER SCANNING THE HORIZON TO DETECT HIS ENEMY WITHOUT BEING HIMSELF SEEN

the British navy, and recognized as a high authority on marine warfare.

The highest type of submarines are known as class E. They are 176 feet long, have a submerged tonnage of 812 tons and submerged speed of ten knots. The torpedoes they hurl into the water are fitted with the deadliest destructive apparatus. On the bow is a revolving steel knife that will cut through the stoutest steel of a battleship may throw around itself. The missile is double acting. First it cuts its way through armor, coal bunker and double compartments into the very heart of the ship, then explodes a high power explosive that wrecks the interior of the huge ship. The second or final explosion is timed a few seconds after the first, by which the torpedo plows its way into the battleship.

Buried deep in the water, the submarine sees every movement of its big enemy. Absolutely invisible, its careful eye is trained on the battleship through the periscope. The periscope is a thin rod sticking a few feet out of the water. It is too small to be visible more than a few hundred feet away, but its powerful lenses will carry for miles. By means of the

periscope, the officer in charge of the submarine computes exactly the distance from the enemy and is able to aim and discharge his torpedoes with deadly accuracy. The released torpedoes fly through the water with the swiftness and sureness of an arrow through the air.

The men on watch on the battleship may see the torpedo when it gets within a few hundred feet of its mark, but before even an alarm can be given, the little projectile has found its quarry and completed its work of destruction.

Subject to attack from above and below, the battleship as an efficient fighting element is doomed. Another expert declares the future Navy will consist of aeroplanes, submarines and a few fast cruisers, providing a place can be found to keep the cruisers safe in time of war.

Bathing in Wax Is Latest Cure

BATHING in paraffine wax, heated to 125 degrees Fahrenheit, is said to be efficacious in the treatment of rheumatism, gout, sciatica and kindred affections. The method is called the Kerithery and its discoverer is Dr. Barthe de Sandfort.

Dr. de Sandfort had for some time used plasters of superheated wax on wounds, ulcers, carbuncles, etc. These not only removed all pain, but caused the places to heal with almost miraculous rapidity. This led him to believe that wax might advantageously be applied to the whole body. Accordingly he went to an oil refinery and entered a vat containing 100 gallons of boiling wax. For from being burned, he experienced rather a pleasant sensation and the after-effects were wonderfully exhilarating. He was so encouraged that he tried the treatment on some patients, with results far exceeding his expectation.

Can Married Men Keep Secrets? Is Question

CAN a married man keep a secret from his wife? Some people think not, and among them are the heads of the firm who built the wonderful racing yacht with which Sir Thomas Lipton is going to make one more attempt to recapture the American cup.

There was always a deal of secrecy

about the design of a new racing yacht, and particularly about the shape of the keel. The keel of Shamrock IV was cast at Camper & Nicholson's yard at Gosport, on November 26 last, and not one married man was among the men employed or took part in the construction of the hull.

During all those years that Lord Kitchener was busy perfecting his plans for his swoop upon the Mahdi he would not have a Benedict upon his staff. If one of the staff wanted to get married, why, he had to find another job—that was all.

As a matter of fact, there were singularly few desertions for this cause. The Sirdar gave his men precious little leisure for love-making.

In businesses which depend for their success on secret formulas married men are sometimes refused employment.

One such has for more than a century past been manufacturing a certain popular sauce. The firm has two large factories, and employs a great number of hands, including scores of

women. There are plenty of married men in the works, but the actual mixing is in the hands of a few highly-paid and much-trusted men, not one of whom is married.

The plan seems to have worked well, for, in spite of many attempts at bribery, the secret has remained inviolate for 120 years.

One might also quote the case of the well-known liqueur, Chartreuse, the formula for which remained a secret among its monkish manufacturers for more than 200 years.

Some industries there are in which the element of danger is so great that employers prefer bachelors to married men. There is a powder factory in Kent where the posts of danger in the mixing-houses are held only by unmarried men.

And in the Du Pont factory at Wilmington, which is the oldest established dynamite factory in the United States, a similar regulation is said to be in force. The Royal Flying Corps of Great Britain prefers to employ unmarried officers and men.

Premonitions Are Our Sixth Sense, Says Well-Known London Psychologist

IS there a sixth sense? A well-known London psychologist made deductions from two strange cases for the London Times. One case was that of a woman who seemed to be endowed with a strange sub-consciousness of spiders, however hidden, and collapsing when in their proximity. The other case concerned a sister's dream which revealed the secret site of her brother's suicide. These two cases act as theories on which the psychologist founded his deductions of the sixth sense.

In defining the sixth sense and its accessories the psychologist began from the beginning:

What is a sense? Is it some form of activity or merely of sensitiveness? Is it the sensitive plant of the fly-catching leaf? Or, rather, is it not that manifestation of both together which is summed up in the vague word, "instinct"—at once a recoil from danger and an effort to avert it? And are not the familiar senses only survivals of a long series vanished, or sparsely lingering as in the enhanced powers of some savage tribes, or the commoner manifestations of clairvoyance? In a word, has not sense killed these senses which are of scant use to the putative adjustments called civilization? The primitive instincts no longer avail for the dwellers in cities, and thus very often the rare recurrence of them is termed "superstition."

Of course, it will occur to everyone that this illustration of the dream might really depend on some dormant memory. The sister might have heard the brother (who was supposed to

have gone away) threaten suicide in the cellar where his body was found. But even if this were so, it is only one of many of such coincidences which cannot depend upon memory.

Not long ago I was assured by a careful witness, well acquainted with the facts, of such an instance. There was a house which she knew where "haunting" took the form of what seemed to be senseless ways of inviting attention. The occupants of certain rooms would feel as if water had been splashed in their faces. One of these more especially affected was a relation who seemed bidden and, indeed, urged to go to a remote church in a distant county and unearth the parish register. With the greatest difficulty, she effected the purpose and thereby was able to set a sad matter right, of which he had not hitherto had an inkling. It is impossible not to believe that some sort of sixth sense often exists, and to suspect that it is the survival of an earlier time when man was nearer the unseen than he is now.

How surely, swiftly people are tracked and scented in these early myths; as surely and certainly as the sixth sense yet lingering among some red Indians enables them to find both their way and their prey. Could Argus have a more watchful sight than some aborigines still exercise? And is not this very "spider sense" in some way associated with the terrible traditions of the vampire and the ghoul? Is the divining rod merely the result of some unascertained "law," or does it not rather presuppose some secret, if unrealized, faculty in its wielder.

Island Is Covered With Glass

"WHY" the beautiful little island has been spoiled by the fruit-growers." So said an enthusiastic lover of nature.

Whoever heard a disparaging word about the lemons, oranges, vines, figs, olives and flowers that abound in Sicily? It would be considered the height of bad taste to object to those delightful growths of the Mediterranean island.

Then why complain of the cultivation in Guernsey? Because it is quite different. Sicily's products grow under the canopy of heaven, but Guernsey is practically one large glass house. Nurseries, growers and agents are the principal features of the place. The various kinds of flowers, from men are embosomed in prominent positions and conversation in Guernsey

sometimes ends in temporary disappointment for the customer owing to the absence of lines, connections, certificates of inspection, etc., necessary to complete the installation by night-fall.

To minimize this trouble the electric light company at Shreveport, La., says the Electrical World, makes use of warning tags which read: "Please notify us when service is wanted and if possible ahead of time. Do not wait until the last minute. This is very important for new houses, as the connections may not be in and the city inspectors must issue certificates before service can be given. If you intend to move, arrange with our office in advance for the date."

It is all very well for the idealist to grumble because the natural beauty of the place is injured by the enormous number of glass houses, but this is a utilitarian age and the output of these houses is not acceptable to England in general and London in particular. From the 34 square miles contained in the island some of the choicest fruits, flowers and vegetables that grace the table are derived. Beautiful carnations, foliage plants, including the trailing smilax, and decorative flowers of various kinds find their way from Guernsey to the English markets.—London Telegraph.

Canton, O., Man Steers Automobile With Foot

STEERING with one's feet in the winter time, while the hands are snugly encased beneath the blankets, is a luxury made possible to the motorist by the invention of a Canton, O., man.

The attachment, which may be placed on the steering column, is operated by tilting the foot backward or forward. By taking the foot off the device the control is automatically changed to the regulation steering wheel.

Answers the Telephone. Telephone apparatus recently patented refers the calling party to another telephone number in case there is "no one home" to answer the original call. The ringing of the bell at the unanswered telephone station, says the Electrical World, causes a motor to lift the hook switch and to strike signals near the transmitter indicating where the called party can be reached by telephone. Another recent invention is that of a sound trumpet which can be attached to the telephone receiver, obviating the necessity of holding the receiver to the ear.

Street Banks in Budapest. Automatic savings banks are increasing in Budapest, and the bank which established them in 1911 intends to extend the supply.

The machines take coins of two values, and give tickets for each coin deposited, the cards bearing interest from the date of issue; 110 tickets may be exchanged for a bankbook. If counterfeit coins are deposited the numbers of the tickets issued for them can be ascertained.

Of the 5,000,000 people in London, more than 200,000 are in a chronic state of poverty. (Copyright, 1914, by the Cleveland Company.)



Germany Has \$30,000,000 in a Tower

ONE of the world's greatest war chests, a monster tower, at Spandau, Germany, is the repository of \$30,000,000 in gold, which the government insists must be kept inviolate for its original purpose—as a fund in case war should press Germany so hard that funds elsewhere would be unavailable.

The gold was obtained from France as indemnity after the Franco-Prussian war, and was placed in the tower to be held in reserve for the special purpose of financing troops should Germany ever again be called on to fight.

Recently a great corps of clerks un-

der the watchful eyes of scores of troops counted every single coin of the vast fortune and found all intact. Not a single coin had been moved from the original place given it when the gold was stored away.

Many political leaders in Germany who are convinced that the days of wars are over, or ought to be, argue that the immense sum could be utilized with great effect in some humanitarian cause.

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