MAY USE MAGNET TO RAISE SHIPS

Submarine Invention Passes Salvage Test of the British Admiralty.

LIFTS 16 TONS OF METAL

Believed That Much of Steel and Metals Lost Through Operations of German Submarines May Be Recovered.

London.—Fishing with submarine magnets for allied ships which strew the bottom of the North sea and the English channel may be attempted on a large scale in the near future if an invention recently placed at the disposal of the British admiralty proves to be practicable in deep-sea salvage operations. It is believed that the device may recover much of the loss in steel and metals caused by the submarines. It is also probable that it may, to some extent, replace the deep-sea diver.

Will Lift 16 Tons.

The "submarine electro-magnet" is octagonal in shape, three feet in width between the opposite sides, two and a half inches in depth, weighs seven hundredweight, and is strong enough to lift 16 tons of metal. In salvage work three magnets will be employed simultaneously, in order to get a good hold on the larger sections of armor plate.

Gigantic searchlights will first be turned on the wreck, and after the vessel has been blown to pieces by explosives the magnets will go down to search for anchors, chain cables and pieces of metal. The power will be sufficient to raise all fragments of metal, even though they be encased in wood.

The mechanical diver's possibilities were demonstrated recently at an exhibition at the Albert docks, Silvertown, attended by representatives of the British admiralty, the Port of London authority and the salvage and shipbuilding companies. Into 36 feet of water were thrown several steel girders weighing two tons, some gas cylinders, castings, a section of railway switch and other metallic objects.

Brought Up Girders.

Swung by a crane, the magnet dived and, to the amazement of the witnesses, came up with the steel girders glued to its under side. The operation was repeated until the last piece of metal had been raised.

At one stage of the demonstration there was lively competition between a human diver and the diving magnet. The steel railway switch, owing to its peculiar shape, could not be located until a diver had gone down and placed the magnet in contact with the rails.

"The magnet is not intended to supplant divers," said Mr. Neale, head of the Neale Magnet Construction company, in charge of the development of the invention. "It will be of value chiefly in cases of wrecks in deep water, or silted up, where divers cannot go.

"It will also be used for loading and unloading vessels, discharging metallic ores, lifting machinery and loading steel sections from rolling mills. A current of 16 amperes, at a pressure of 220 volts, supplies the power."

Bear Island's History.

Midway between Norway and Spitzbergen, Bear Island thrusts its head, known as Mount Misery, above the cold waters. The whole island, save for moss and lichens, is almost destitute of vegetation. Long ago it was joined with the Spitzbergen archipelago; the continental shelf upon which the island sits shows a drowned valley deepening to 200 fathoms; this marks the course of an ancient river system that must have drained an area larger than the present basin of the Volga.—Scientific American.

FERTILIZER FOR FRUIT TREES

Nitrate of Soda and Acid Phosphate Applied in Circle Will Produce Best Results.

The fruit tree fertilizer most generally in use and producing the best results during recent tests by leading orchardists, consists of five pounds of nitrate of soda (or four pounds of sulphate of ammonia) and five pounds of acid phosphate, applied in a circle under the outer ends of the branches of the trees and worked into the soil about four inches deep.

TOO STARVED TO BE HUNGRY?

There Comes a Final Stage in the Horror, When Taste for Food Is Lacking.

I cannot quite bring myself to tell tales of famine horrors—the monkey-faced, pop-eyed babies tugging hungrily at the cold breasts of dead mothers lying on the frozen ground; the piteous old women and the stoical men; the incredibly deformed starving waif whom I picked up outside of the city of Tsingkiangpu; the boy on the wall of Chinkiang who was carrying home a starved cat for food, and in response to a query, tried so hard to sell it to me as a delicate morsel, and such general concomitants as the incidence of smallpox plague with the famine.

One of the unexpected aspects of work in the famine camps came when I was accompanying Mrs. Paxton of Chinkiang as she made rounds to distribute medicine to the sick among the hungry. As a matter of fact, relatively few persons ever die in a famine directly from actual hunger, but rather from diseases induced by malnutrition.

Obligingly, Mrs. Paxton freely translated for me as we went along, and we found, in pathetic paradox, that the commonest request of these starving creatures was for medicine to give them an appetite! Even when they succeeded in getting a bowl of food from the relief station, ran the repeated tale, they could not eat it, having no taste for food.

To us this meant, obviously, that the sufferers had reached the final stages, where craving for food had passed away. They were not hungry, because they were starving!—William T. Ellis in the Outlook.

NEW TOY FINDS MUCH FAVOR

Parisian Children Hail With Joy Idea Which Has Been Imported From Central Borneo.

The latest toy which Parisian children are buying, and which threatens to displace the scooter in popular favor, is a modern form of the old "jumping stick."

The new "jumping stick," which is called a "pogo," is more scientific than its predecessor, which was nothing more elaborate than a single stilt with two rests for the feet.

It is made with an india rubber pad and with a strong spring, which enables its possessor to take a series of leaps without jar.

The pogo was first found in use, in a primitive form, among the Dyak natives of central Borneo, who gave it that name. It was a stick with a cross-piece, on which certain favored young men used to perform a kind of dance at sacrificial ceremonies.

As the chiefs took charge of the pogos after the ceremony, hiding them until the next occasion for their use, it was very difficult to obtain them, but a French traveler who saw the dance in progress, described them on his return to Paris. From his rough sketch the new Paris toy has been made.

HAS ADDED TO VOCABULARY

Gabriele D'Annunzio Is Credited With Making Important Additions to the Italian Language.

Commander Gabriele d'Annunzio has become a coiner of words. Aside from having a special d'Annunzio dictionary compiled and published by some enterprising Italian publishers to assist his leaders in knowing the meaning of words not found in the ordinary dictionaries, the premier Italian poet and adventurer lets very few weeks pass without promulgating some new addition to the Italian vocabulary.

The former dictator of Fiume is in a quiet retreat. Various pilgrimages are made to him by men who were adventurers with him in the Quarnero enterprise. Some of them asked him for a new name for cognac. He said: "There is but one name for cognac and that is 'arzente,' which signifies that it is the very force of the wine."

He inquired how the people of Florence were taking his suggestion that the name of Florence be changed from the present Italian name of Firenze to Florenza, meaning "a city of flowers." The pilgrims stated the people of the town welcomed the idea and may adopt his proposal.

The poet is doing a little literary work while there are no more Fiume fields to conquer.

MODERN DAY MIRACLES

American Chemists Have Accomplished the Wonders Which Ancient Chemists Strived for by the Utilization of Coal Tar By-Products

(Told in Eight Sketches)
By JOHN RAYMOND

No. IV
THE ALCHEMIST'S DREAM

Through the literature of the ancients runs the absorbing story of the alchemist's patient search for the touchstone which would transform all base metals into pure gold, and the never-ending quest for the elixir which would restore youth to the aged and would cure all human ills. The alchemist, driven from cellar to garret and often put to death, had an elemental knowledge of chemistry and vaguely dreamed that it could be made to perform wonders.

It was Ben Jonson's alchemist, Subtle, back in the early seventeenth century who planned "to change all that is in my house to gold, and early in the morning to send to all the plumbers and pewterers and buy their tin and lead up; and to Lothbury for all the copper." And more than that, by means of this magic elixir, in eight and twenty days he planned to transform an old man of four score into a prattling child.

Certainly, chemistry has not succeeded in performing these marvels. The philosopher's stone still is an unknown quantity to science, buried, perhaps, with the pot of gold at the rainbow's end, and the elixir of youth is as deeply hidden as on that far-off day when De Soto set forth so bravely from Spain to find it in the new world. But chemistry has accomplished wonders by the utilization of coal tar by-products which contribute to every phase of our daily life. Take the fairy glass of the chemist and look into this rather uninteresting substance—coal.

We put a kettle of it over a fire and we see leaving at various times what the chemist calls the Crudes-benzone, toluene, xylene, napthalene, phenol, anthracene, carbazol, and some others. But these are the most important. Some are clear liquids, some are beautiful crystals, but all are brought out of the black coal tar by the magician's wand, which is simply fractional distillation; that is, catching and condensing the vapors given off at various temperatures.

Now, what of the crudes? Add nitric acid, or any one of hundreds of chemicals, and either heat or cool as the case may be, and we get a host of other compounds described as intermediates. Although some of the crudes and many of the intermediates are useful as such, the real development begins with the chemical treatment of the intermediates. With many of these intermediates, one line of treatment will produce drugs, another high explosives, another poison gases, still other perfumes, food flavors and photographic materials. Some have varying peace and war time uses without further treatment. It should be noted that some of these crudes require as many as fifteen manipulations to produce a given compound and in each manipulation a by-product is produced which again must be made into something useful in order to avoid waste.

It is because of this treatment and retreatment of coal, crudes and intermediates that it is so easy to convert a dye plant into a factory for the production of high explosives or poisonous gases almost over night.

Germany was indeed farsighted, back in 1859, when she took advantage of Perkin's discovery, and began the development of a gigantic dye industry so that she might never be without the crudes and intermediates so essential to success in war or peace.

Germany developed the synthetic dye industry, just as she developed other industries, to create employment and wealth for her millions. But through these developments she learned the value of chemistry, of chemicals, and of chemists themselves. She realized early how dependent her peace development was on chemistry and she soon saw the value of chemical industries to war. Germany saw that the manufacture of dyes required much chemical research and also that dye making made use of the waste products from the coke ovens, themselves a necessity to her iron and steel industry. She saw its value in the production of explosives, gases and fertilizers for her fields. This foresight gave Germany a forty year start on the United States, and the rest of the world.

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