A GOOD FIT FOR THE DEAD

Of old Mesopotamia was gotten in adjustable coffins like this one which was found recently at Tell Billa.

CHEMISTRY-HORTICULTURE

Sure-Kill Poison Found For Troublesome Bushes

A POISON for undesired bushes such as poison ivy and European barberry, quick and sure in its action yet clearing out of the soil after its work is through, was described in Cleveland before the meeting of the American Society of Plant Physiologists by Prof. R. B. Harvey of the University of Minnesota.

This new agent in man's chemical warfare against tough weeds is ethylene oxide, chemically related to the ethylene chloride which has been found very effective in hastening the ripening of fruits and vegetables. Professor Harvey discovered the value of ethylene oxide during the course of experiments with various ethylene compounds. He found that the oxide killed the fruits and vegetables instead of speeding up their ripening processes.

He tried the compound on some large barberry bushes, which are being harried out of existence in the great grain areas because they harbor the black stem rust of wheat. What he calls "depth charges" of ethylene oxide dissolved in water were sunk into holes pierced in the soil at the roots. A few days later the bushes were revisited, and in every case they were found to be in the last stages of the death struggle. About one and one-half ounces of ethylene oxide, diluted out to a ten per cent solution in water, sufficed for a large bush.

At present barberry bushes are fought either by digging them up, which leaves stray roots free to sprout again, or by dumping common salt at their roots "Depth charges" of ethylene oxide, Professor Harvey concludes, seem to offer the best means so far discovered.

Science News Letter, January 3, 1931

ARCHAEOLOGY

Adjustable Coffin Found At Tell Billa in Mesopotamia

AN extraordinary coffin made in two parts so that one could slide partly into the other, thus adjusting the case to the length of the individual, is the newest discovery from old Mesopotamia.

The telescopic coffin, beautifully made of terra cotta, has been found by the joint expedition of the University of Pennsylvania Museum and the American School of Oriental Research, which is excavating at Tell Billa, in Mesopotamia.

The tomb in which the coffin lay was encountered some weeks ago, and when the archaeologists realized that it had not been disturbed it was pronounced a very valuable discovery. The tomb walls were built of stone and the entrance was bricked up. The fine earth which drifted into the tomb served to protect the sarcophagus and the objects lying around it.

The adjustable coffin in the tomb proved to contain only dust, but other objects were better preserved. Some fine bronzes were there, including an elaborate apparatus for smoking hashish or some similar substance. Two elaborate candlesticks were at the head of the sarcophagus. With them were half a dozen vases, some little plates and a red beaker. The vases contained children's bones, it is reported. In the plates could be seen traces of foods no longer identifiable. The beaker was for water or some other drink.

Tell Billa, which today is a very large and imposing mound covering about thirty acres, was a place of habitation for thousands of years from about 4000 B. C. on into historic times. One of the summer palaces of the great Assyrian King Sennacherib who located at this place.

The tomb which has been explored belongs to a period after the fall of the Assyrian Empire. It is assigned to the fourth or fifth century B. C., when a line of Persian kings ruled that region until they were swept away by the conquests of Alexander the Great.

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CHEMISTRY

Iodine in Paying Quantities Discovered in California

IODINE, expensive and pungent-smelling chemical, has been discovered in paying quantities in southern California. This comparatively rare chemical element has long been controlled by a South American monopoly which regularly maintains a "pegged" world price on the commodity at a high level. Industries concerned with an iodine supply during possible future war blockade are much interested in the California prospects.

Some time ago Los Angeles petroleum chemists, analyzing brackish waters from oil wells near Long Beach, Calif., discovered iodides in commercial quantity. So great is the mass of worthless salts associated with the iodine, however, that difficulty has been experienced in extraction of the desired product. At least one company, however, has attained some success with the problem, and California iodine is appearing on the market.

One of the favored methods of manufacture involves the treatment of the brine with nitrous acid which drives the iodine out of its salty compounds and permits it to be absorbed in activated charcoal much as war gases were caught in gas masks. Distillation of the loaded charcoal yields the precious product, which commands about four dollars per pound.

Iodine holds a queer economic position in chemical industry. To be sure, it goes into drugs, disinfectants, a few dyes, photographic supplies and a host of minor applications. Apparently nobody uses it in huge quantities, though very many persons require small quantities of the substance. Accordingly no-

body is seriously embarrassed if a monopoly charges several prices for the supply. The South American producers could furnish a very much larger quantity than that now marketed, but prefer to restrict trade and charge a high toll.

Iodine has two inexpensive chemical brothers, chlorine and bromine, which have taken over most of the large-scale duties which manufacturers might well have assigned to the more expensive element. Iodine is a solid, rather than a fuming liquid like bromine, or a corrosive gas like chlorine. There are accordingly many situations where chemical manufacturers would find it superior in technical use. As long as iodine is a hundred times as costly as free chlorine, and fifteen times as expensive as bromine, it can hardly make much industrial progress.

Science News Letter, January 3, 1931

ASTRONOMY

Suggests Sun Spots Due To Tidal Effect of Planets

JUST as the sun and moon produce tides on the earth, so does the gravitational attraction of the planets produce tides in the sun. These tides, in turn, are responsible for sun spots, in the opinion of Dr. Dinsmore Alter, professor of astronomy at the University of Kansas. Speaking in Cleveland before the astronomical section of the American Association for the Advancement of Science, Dr. Alter announced that he had secured a very close correlation between the computed numbers of sun spots and those actually observed. The chance of accidentally obtaining such a close correspondence between theory and fact is about one in thirty thousand, he declared.

Science News Letter, January 3, 1931

RADIO-ASTRONOMY

Moon's Position Thought To Affect Radio Transmission

Astronomer Belives That Its Distance From The Meridian Is Associated with Height of Kennelly-Heaviside Layer

AN apparent influence of the position of the moon in the sky upon radio transmission on the earth has been detected by Dr. Harlan T. Stetson, director of the Perkins Observatory, at Ohio Wesleyan University.

Speaking in Cleveland before the astronomical section of the American Association for the Advancement of Science, Dr. Stetson presented his hypothesis that the hour angle of the moon, that is, its distance from the meridian, is associated with the height of the Kennelly-Heaviside layer. This is the ionized layer in the upper atmosphere that is supposed to reflect radio waves downwards, and so make long distance transmission possible.

For some years Dr. Stetson has studied the reception of the carrier wave from a Chicago broadcasting station and has found good evidence of a connection between the transmission and the number of sunspots. He attributed this to differences in the height of the reflecting layer. Now his latest studies give evidence that the moon is also involved.

The main cycle of variation for sunspots is about eleven years, but Dr. Stetson's researches have shown a shorter one of about 15 months. He pointed out that this period corresponds closely with the recurrence of certain arrangements of Venus and Mercury, thus suggesting a possible tidal effect.

He also stated that the maximum of the last sunspot cycle had occurred about July 1, 1928, while the last two months have shown the rise of a secondary maximum. This, he said, should be over in a few months, and by the end of 1931 spots will be fewer than since 1925. Also, this will mean an improvement in radio transmission. He said that last summer's time of minimum activity on the Sun had been associated with very good radio connections.

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ICHTHYOLOGY

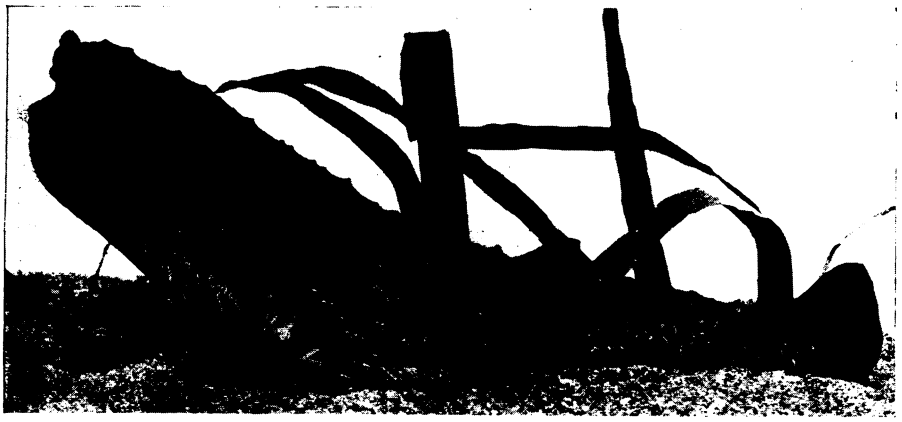
A Fish That Walks On the Sea Bottom

A SPECIMEN of a fish that walks on the bottom of the sea is now on exhibition among the piscatorial exhibits at Field Museum of Natural History, Chicago. It is the batfish, a native of the tropical and semi-tropical seas of the Gulf of Mexico.

The batfish has many peculiarities. Looking down at it from above it seems to have a body like a toad, but with a fishy tail. Body and tail are covered with warts and a scanty growth of white whiskers. Looked at from the side, it appears to have four legs with finny feet, and these are additionally odd from the fact that the pair close together under the throat are the hind feet, while the forefeet or hands are far apart and set well back.

While it can swim with its tail, like any ordinary fish, the batfish usually walks or hops along the bottom in comparatively shallow places, according to Alfred C. Weed, assistant curator of fishes. In its hopping, Mr. Weed says, it moves exactly in the same way as a rabbit feeding on a lawn. The weight is rested on the forward pair of feet and the rear ones are brought ahead; then the weight is shifted to the rear pair and the forward ones moved along.

Science News Letter, January 3, 1931



THE BATFISH

A specimen of which is now on exhibition at the Field Museum of Natural History, Chicago, walks on the sea floor. It has hind feet where its front feet should be.