

Like rubber it can be vulcanized but has the additional valuable property of being impervious to gasoline and does not swell and quickly disintegrate.

Koroseal is the rubber-like plastic with properties that make it desirable where natural rubber fails. It can be obtained in hardness that runs all the way from a soft jelly to hard rubber. You can mold it, make sheets out of it or extrude it from openings. Remarkable resistance to light, water, air and certain corrosive chemicals and oils are its merits. Chief use is in the impregnation or coating of fabrics, paper and metals.

AXF is another rubber-like synthetic organic compound which makes hard rubber flexible and aids in overcoming the deterioration due to ozone.

DuPrene is one of the newest and most widely known synthetic products having rubber-like properties, which has greater resistance to oil, grease, gasoline and air and heat than natural rubber. Tires have already been built with it and performed satisfactorily. Leather, fabrics, asbestos and cork have already

been coated with it for special service.

Plioform is a rubber derivative made from pale crepe rubber. It resists the attack of water, all alkalis and most acids. It has excellent electrical insulation properties. This plastic has wide usefulness in the field of sound production. When used as a sounding board, it approaches violin wood in producing pleasing tones.

Sixth of the rubber-like materials is Tornesite, a rubber derivative, whose present function is primarily in the coating of metals. It shows resistance to acids, alkalis, smoke and fumes and can be applied with a brush or as a spray.

In the commercial sense there is little reason why the synthetic rubber-like plastics should exactly duplicate the natural products. While the search for synthetic rubber originally had that goal, the present products have excelled rubber in many ways and lack only the price angle to be highly competitive on a wide scale.

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## ARCHAEOLOGY

## Palaces of King Darius Yield Magnificent Art

See Front Cover

**M**AGNIFICENT sculptures portraying King Darius the Great on his throne have been unearthed from the ruins of his famous palaces at Persepolis.

Word of the discovery has just been received at the Oriental Institute of the University of Chicago. The Institute's expedition to Persepolis reports that the sculptures are among the finest examples of ancient art yet found.

The sculptured scenes adorned two porticos of a courtyard and represented King Darius giving audience to some petitioner, says Dr. Erich F. Schmidt, field director of the expedition. King Darius and his son and heir, Xerxes, are shown giant-size, seven feet tall, to increase their majesty. The petitioner and the courtiers are ordinary life-size. Attendants include the carrier of the royal bow and mace, two lance carriers, and a man believed to be the Food Taster, who is holding a napkin.

Important clues to the burning of the Persian palaces by the conqueror Alexander the Great, in 330 B.C., have been discovered, Dr. Schmidt reports. Telltale silver coins bearing Alexander's head prove that the palace was occupied or

## PUBLIC HEALTH

## Campaign to Save Lives Of Premature Infants

**A** CAMPAIGN to save the lives of premature infants is being waged by the Chicago Board of Health. Dr. Herman N. Bundesen, president, regards this as the most promising field of effort for the further reduction of the infant death rate.

The first measure taken by the city was a careful survey of all the hospitals. These institutions are now rated on their facilities such as "premature" nurseries, heated beds and equipment for the administration of oxygen.

Next the board of health passed a regulation making premature births reportable at once by telephone. As soon as such a birth is reported, a nurse is dispatched to help the doctor.

The board of health provides an incubator ambulance to transport these infants, without charge, from homes to good hospitals. Heated beds are sent to homes when hospital care is not given.

Chicago's next step was to establish a mother's milk station where breast milk is collected and made available for premature and other infants who need it and whose parents are unable to pay for it.

Finally, a simply worded booklet on the care of the premature baby is sent to the mother.

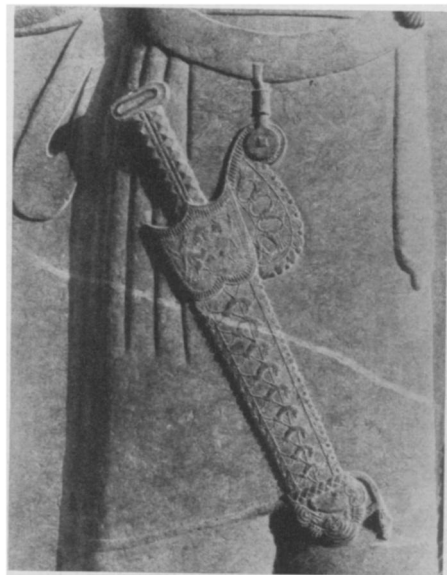
A survey, conducted during 1935 of the death of every Chicago infant under 30 days old, is reported on in the *Journal of the American Medical Association* (July 25).

This survey shows that most of the mothers of these infants did not have proper care before the child's birth. Unrecognized and untreated disease conditions in the mother endangered the life of the infant.

Dr. Bundesen and his associates also found that in more than half of the cases the drugs given the mother preceding and during childbirth were questionably administered. The peril is especially grave, they contend, when large doses of analgesics are given to abolish the pains of labor.

Almost 70 per cent of the deaths of premature infants in Chicago during 1935 occurred within the first twenty-four hours. This is almost double the percentage of full-term infants who died during the first twenty-four hours.

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### LIKE LEATHER

This sword and scabbard are not of leather and metal but carved in stone upon the panel shown in the view on the facing page. They are worn by a guard standing behind the king and his son.



#### PALACE TERRACE

Here was discovered a beautiful panel showing King Darius the Great seated upon his throne with his son, Xerxes, standing near. You may see the panel on the center left. In the right background is the Expedition house, once the harem palace of Darius.

preserved until Alexander's soldiers set torches to the beautiful city of Persepolis, according to legend, in a drunken carouse. The coins were found in a palace courtyard, where one of Alexander's men must have lost them.

Another important piece of evidence, possibly explaining Alexander's rage, is the headless marble torso of a woman found lying in a passage. The lovely statue, reminiscent of Parthenon figures in Athens, may have been one of

Xerxes' trophies from the sacking of Athens, Dr. Schmidt suggests. If such reminders met Alexander's eye in Persepolis, his order to burn up the place may be understood.

So rich in buried history is the neighborhood of Persepolis that Dr. Schmidt enthusiastically calls it "an archaeological paradise."

The cover picture shows the tomb of Darius I.

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#### MEDICINE

## Single Treatment Restores Delirium Tremens Patient

**D**ELIRIUM TREMENS, a "dramatic incident" in the life of a chronic alcoholic, frequently leads the drinker either to the hospital for the insane or to the cemetery.

How he can avoid both of those places and receive simple treatment in the ordinary local general hospital is told by two psychiatrists, Drs. William N. Cline, Jr., and Jules V. Coleman of Grasslands Hospital, Valhalla, N. Y. (*Journal, American Medical Association*, Aug. 8).

The modified Steinbach treatment which they recommend has sharply re-

duced the death rate among chronic alcoholics in the last two years at the psychiatric institute connected with Grasslands Hospital. This rational treatment can be undertaken at any general hospital.

Delirium tremens arises from an acute swelling or fluid in the brain tissues with increased pressure in the skull. The treatment used successfully by Drs. Cline and Coleman is to dehydrate the cerebrum by means of spinal drainage, meanwhile limiting the patient's intake of water for a brief period and giving him a sedative that will induce sleep.

A single application of this treatment is usually enough to return the man with "snakes in his boots" to his normal physical state.

These two physicians deplore the still common use of alcohol in the treatment of alcoholism. The tapering-off treatment is futile and inadvisable, they declare, and the psychological effect on the patient is harmful.

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#### SEISMOLOGY

## First Earthquake Recorder To be Placed in Museum

**T**HE first earthquake recorder in the United States, placed in service at Lick Observatory at the University of California in 1886, will soon go on display at the museum of The Franklin Institute.

The Lick Observatory instrument was one of the few in California at the time of the disastrous 'quake in San Francisco on April 18, 1906. The Observatory is only 45 miles away from San Francisco. The original record of this severe and damaging shock is still preserved and shows that while the vibrations threw the recording mechanism off the tracing paper, the apparatus functioned unharmed.

The instrument is known as a Ewing three-component seismograph. It was the invention of Prof. J. A. Ewing, of Dundee, Scotland, and the first description was published in *Nature*, a leading British scientific journal, on August 12, 1886. Two heavy weights, mounted to swing like a gate, are connected by levers to pointed arms which rest on a glass disk 24 inches in diameter which has been covered with soot. One weight is free to swing in an east and west direction, the other north and south. When the earth shakes under the instrument, the entire machine moves, but the weights tend to stand still.

A similar effect can be observed if a coin is laid on a piece of paper, and the paper suddenly jerked away. The coin does not move with the paper, but merely drops. This relative motion between the weights and the instrument makes the pointed lever move back and forth over the disk, which is slowly rotating, like a phonograph turn-table. In this way, successive swings of the lever do not obliterate the others. Another weight, balanced on the end of a spring, and free to swing up and down, records in a similar way the vertical movement of the ground.

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