

THE CORROSION OF A BOILER TUBE.

We are indebted to Mr. H. H. Shank, of Harrisburg, for the photograph of a section of a water tube which we present herewith. It was recently taken out of a Babcock & Wilcox boiler, in use at a large steel plant near Harrisburg, Pa. It is a striking example of what is apt to take place if the water is dirty or holds mineral salts in solution. The deposit in this case seems to be simply mud, which was held in suspension by the water at the time of the entrance to the boiler and afterward deposited. The tube is four inches in diameter, and more than three-fourths of the water space is filled with the deposit. The tubes were removed and new ones put in. It is a good object lesson, showing the necessity of frequently examining the boilers, as it is easy to see that the results obtained from boilers in such a condition must necessarily be uneconomical.

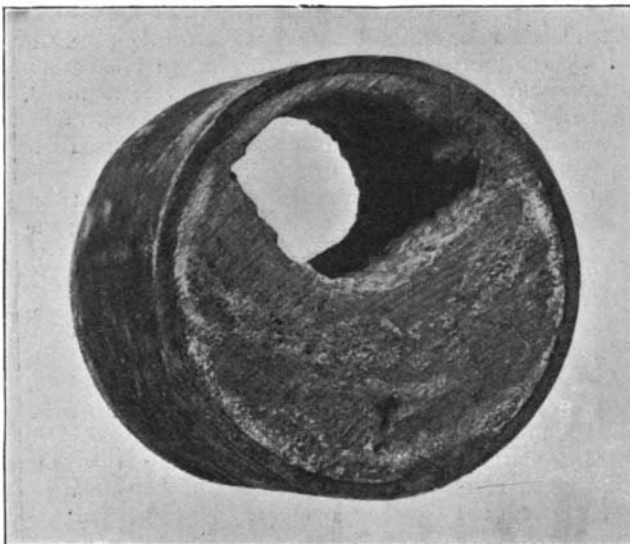
A Carthaginian Mask.

In 1893, the Rev. A. L. Delattre, having had his attention called by an Arab to several small objects that he had discovered while making some excavations at Douimes, decided to make some researches in the vicinity, says Cosmos. Toward the latter part of the summer of that year, having engaged some laborers and set them to work, he was soon rewarded, after excavating through six feet of soil intermixed with rubbish, by the discovery of the primitive argillaceous earth in which the Carthaginians found a last resting place for their dead. In November, 1893, there had been discovered sixty tombs, almost all of which were placed at right angles with the seashore. The majority were simple trenches covered with slabs of tufa, the only kind of stone employed in the primitive structures of Carthage. Infiltrations had filled each trench with a fine yellow sand, the color of which was often confounded with that of the natural earth. The funereal furnishings usually consisted of two medium sized urns with a handle on each side, of two small jugs with a single handle, of a flat bicornous lamp and its patera (a sort of saucer), and sometimes of a bronze hatchet, a hand bell, cymbals and a mirror or other objects of ornament, such as collars, rings, bracelets, earrings, painted vases, figurines, amulets, shells, etc.

One of the most interesting finds was a curious terra cotta mask, brought to light in September. It was discovered at a new point of the Punic necropoli of Carthage, very near the site of Serapeum, in a very small space where had just been found more than twenty Carthaginian tombs, always containing funereal furnishings of the same character, save that the pottery was more highly ornamented and of finer quality. The mask is 8 inches in height and 5 in width, and the hollow part $3\frac{1}{2}$ inches in depth. This grotesque face, with low and narrow forehead, projecting eyebrows, wide and flat nose, and angular cheeks and crooked mouth, preserves a few traces of black paint. The mouth and eyes are cut out through the thickness of the clay and the ears are ornamented with rings. Around the mask are distributed five holes—one at the top and one beneath and one above each ear. These holes certainly served for fixing the mask in place. There is nothing Egyptian nor Greek about the style of the work, and the specimen seems to be an authentic one of local art. In fact, at the base of the forehead and at the origin of the nose, it bears the mark of its Punic origin in the crescent surmounting the disk, which it embraces with its depressed horns—an emblem that is very frequent upon the votive stelæ of Carthage, and which we often find engraved upon the bezel of rings or arranged so as to be strung and worn as an amulet.

One peculiarity that this mask exhibits is that it changes physiognomy according as it is viewed in profile, at an angle, or full face. This mask constitutes a true caricature. Contrary to the opinion held up to recent years, the Carthaginians must have practiced the art of portrait taking. Prof. Duhn, in an article recently published at Berlin, observes that several Punic masks in the Saint Louis Museum remind us of Japanese rather than of Mediterranean art, on account of the extraordinary naturalism exhibited therein and that makes true portraits thereof. Such is the first

impression, but a profounder study of these interesting pieces permits us to recognize an entirely archaic art in them. The mask under consideration is less than natural size and consequently could not have been applied to the face of a corpse; neither was it suspended in the tomb. Notwithstanding the holes with which they are provided, these sort of masks, as well as the clay statuettes that are found in the necropolis, were simply placed alongside of the dead. The object

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of the relatives or friends who inclosed these objects in the tomb was merely to know that the body of the defunct was accompanied with an object to which they attributed a magic virtue capable of protecting the mortal remains in their final dwelling. Such masks have been discovered in the most ancient necropoli of Sardinia. The Cagliari Museum possesses several of them.

How Worry Affects the Brain.

Modern science has brought to light nothing more curiously interesting than the fact that worry will kill. More remarkable still, it has been able to determine, from recent discoveries, just how worry does kill.

It is believed by many scientists who have followed most carefully the growth of the science of brain diseases, that scores of the deaths set down to other causes are due to worry, and that alone. The theory

is a simple one—so simple that anyone can readily understand it. Briefly put, it amounts to this: Worry injures beyond repair certain cells of the brain; and the brain being the nutritive center of the body, the other organs become gradually injured, and when some disease of these organs, or a combination of them, arises, death finally ensues.

Thus does worry kill. Insidiously, like many another disease, it creeps upon the brain in the form of a single, constant, never-lost idea; and, as the dropping of water over a period of years will wear a groove in a stone, so does worry gradually, imperceptibly, but no less surely, destroy the brain cells that lead all the rest—that are, so to speak, the commanding officers of mental power, health, and motion.

Worry, to make the theory still stronger, is an irritant at certain points, which produces little harm if it comes at intervals or irregularly. Occasional worrying of the system the brain can cope with, but the iteration and reiteration of one idea of a disquieting sort the cells of the brain are not proof against. It is as if the skull were laid bare and the surface of the brain struck lightly with a hammer every few seconds, with mechanical precision, with never a sign of a let-up or the failure of a stroke.

Just in this way does the annoying idea, the maddening thought that will not be done away with, strike or fall upon certain nerve cells, never ceasing, and week by week diminishing the vitality of these delicate organisms that are so minute that they can only be seen under the microscope. — Pharmaceutical Products.

RAILWAY MAIL CATCHER AND DELIVERY DEVICES.

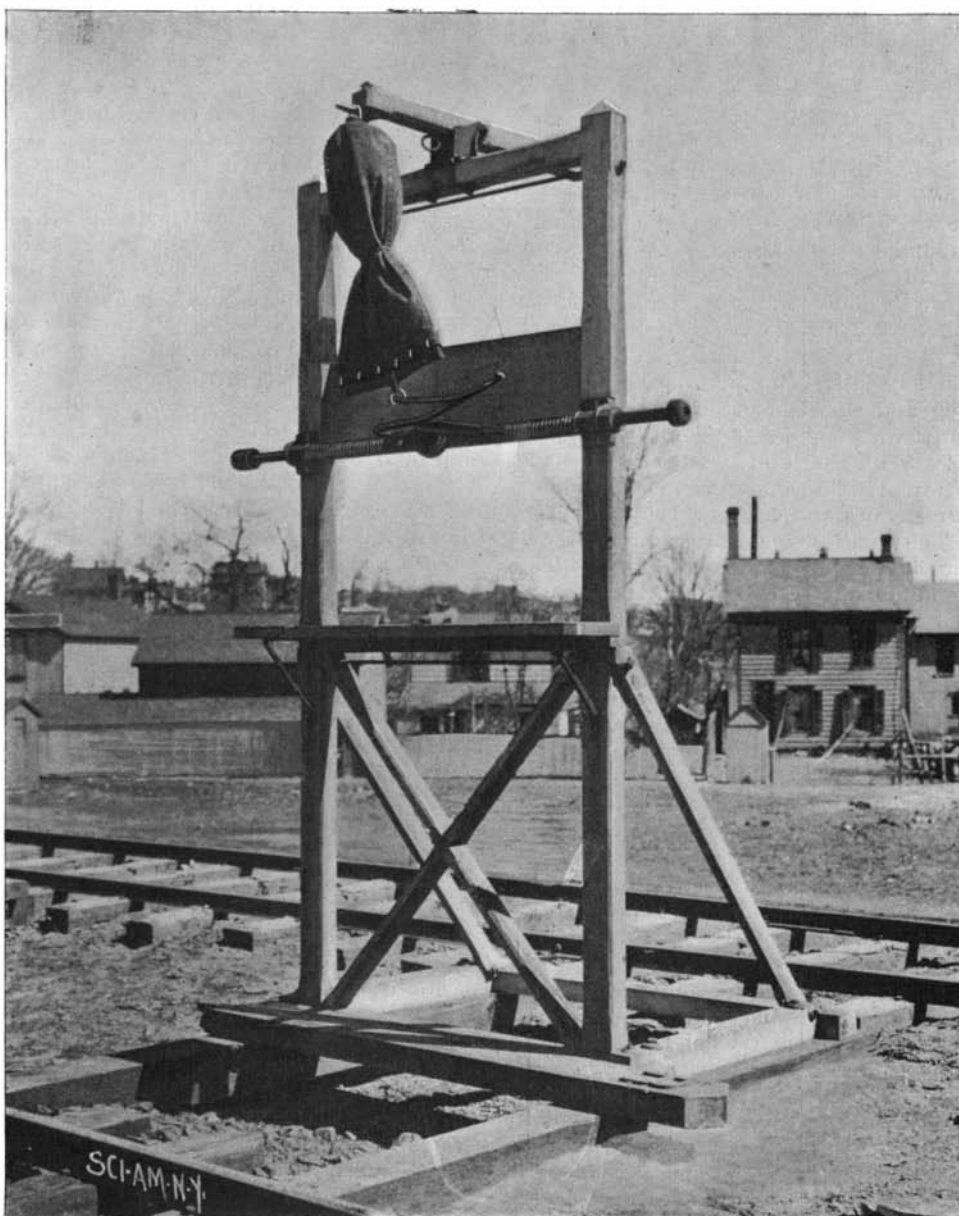
In the SCIENTIFIC AMERICAN of August 14 and August 21 we described and illustrated two systems of mail catcher and delivery devices which have been approved by the Post Office Department and recommended for adoption by the various railroads, and the accompanying illustrations represent the appliances and operation of still another system, the Winsor, which has met with similar governmental indorsement. Of all these systems it may be said that their completion, in their present practical operative form, is a matter of comparatively recent date, considering how many years inventors have been working upon this subject, and the great number of patents issued in this field.

So, too, the number of railroads which have failed to supply themselves with improved mail catcher and delivery devices is still very large, although it is fair to presume that progress in this direction will now be more rapid, from the fact that several devices have received official sanction, as well as because the public are becoming more insistent, year by year, on all matters tending to promote rapid transfer and handling of the mails.

The Winsor device (C. B. Winsor, general manager, Jamestown, N. Y.), attached to the car, comprises two main parts, the upper one of which forms the catcher and deliverer, while lower down is a swinging arm, being a half circular steel bar having a bow shaped spring on its extreme end to hold in position the lower ring of the pouch as it is held out from the car, as shown in one of the illustrations, and assist in holding it steadily in position to be engaged by the catcher on the crane at the station. The catcher and deliverer is supported by a steel bar extending across the car door, the bar rotating in half a circle in a plate bolted at one side of the car door, whereby the whole device may be swung down out of the way at the side of the door.

Upon that portion of the steel bar between the two projections of the bracket at the side of the car door is a collar with a lug to engage a projection on the back of the bracket to hold the catcher arm in horizontal position. A coiled spring at each side of the collar, bearing on the projections of the bracket, holds the lug in operative position and at the same time breaks the force of the blow on the catcher arm when the pouch is caught.

The catcher arm rotates with the bar by a sleeve extending from which is a handle at right angles to the catcher, and the latter itself

**MAIL BAG IN POSITION AT STATION TO BE TAKEN BY APPROACHING TRAIN
WINSOR MAIL CATCHER AND DELIVERER.**