SURGERY

"Fender Fracture" is New Auto-Caused Surgery Problem

Pedestrian, Standing With Leg Straight, Struck From Side by Fender of Car Cutting Corner, New Type Case

A NEW condition for surgeons to treat, called "fender fracture" for short, was introduced to surgeons by Dr. Frederick J. Cotton of Harvard University Medical School at the meeting of the American College of Surgeons.

The new condition is the peculiar kind of break or fracture of the leg which so frequently occurs when a pedestrian, standing with his leg straight, is struck from the side by the fender, mud-guard or tire of an automobile, Dr. Cotton explained. The new kind of fracture may be traced chiefly to the fact that automobiles cut corners and pedestrians stand too close to the curb.

Fender fracture is a real fracture entity, common in these days of auto traffic and bumps, Dr. Cotton said. Fender fracture is the nickname for "comminuted compression fracture of the outer tuberosity of the tibia produced by force exerted from the outer side, producing valgus strain."

Machine age injuries are horribly mutilating because the accidents causing them are protracted, Drs. William R. Cubbins, James J. Callahan and Carlo S. Scuderi of Cook County Hospital, Chicago, told members of the American College of Surgeons.

It is one thing to crack an arm or leg in a simple fall, these surgeons indicated. The injured limb can be put to rest immediately and the broken bone will quickly heal. But when the bone is broken in an automobile accident or by a machine in a shop, the injury is far more severe and healing is much slower because the breaking force continues so much longer, before the automobile or machine can be stopped.

"In an automobile accident, if the thigh of one of the occupants is fractured at the moment of impact, and the car then turns over several times before throwing him clear, the limb is twisted and torn beyond hope of rapid repair," the Chicago surgeons said.

"It is the continuation of the breaking force that causes interposition of tissues between the broken ends of the bone, injures the growth and blood-supply membrane of the bone or periosteum, and injures or destroys the blood supply of the adjacent tissues."

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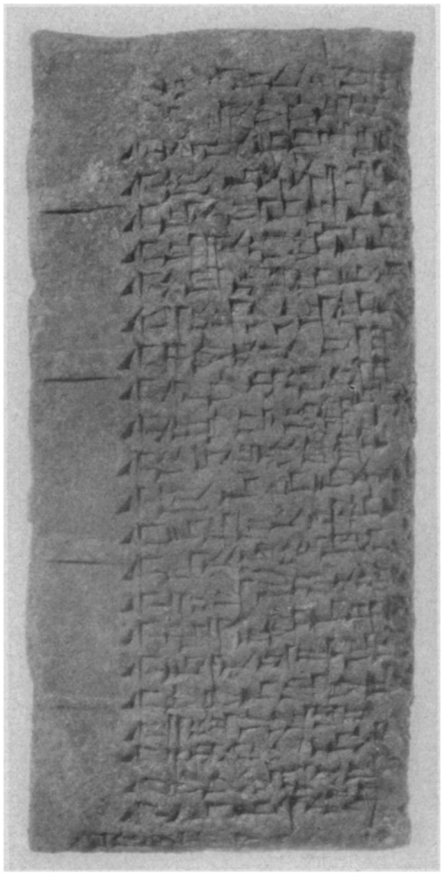

WHAT IS INSIDE?

Here is a clay envelope sealed 3,900 years ago, now at last to be opened.

ARCHAEOLOGY

Sealed Contract 3,900 Years Old to be Opened at Yale

A CONTRACT written and sealed in an envelope by Babylonian parties 3,900 years ago has arrived in America, and will be opened.

At Yale University, where the impressive document has come to the Babylonian Collection, Prof. Ferris J. Stephens announced that some qualified scholar will open the large, well-preserved clay envelope and remove the clay tablet inside, to study the ancient contract.

The Yale collection has also obtained a piece of Babylonian writing unique in present knowledge of that country. This is the original copy for a personal seal, for the engraver to use, just as today an order might be written to show an engraver how to letter some calling cards. The Babylonian who ordered this seal wrote on a small clay memorandum the words he wanted copied, not in cursive script, but in the careful monumental script used on stone inscriptions.

"Inscriptions on seals presented more than ordinary difficulty to the engraver," explained Prof. Stephens, "for they must be cut in mirror writing in order to produce the proper impression when they are impressed on a soft clay tablet.

"While this copy is written with the signs in their normal positions, there are traces of the practice strokes of the engraver on the edge of the tablet, where he produced a few of the more difficult signs in mirror writing."

The seal as ordered was worded in the style popular about 2000 B.C. It consisted of three names: first the owner of the seal, then his father, then the deity to whom he was especially devoted. Translated by scholars of Babylonian it reads: "Ili-u-Shamash, son of Lublut-ili, servant of Lugal-banda." A letter addressed to this same Ili-u-Shamash is among the tablets Yale has acquired.

Babylonian kings, like unscrupulous kings of Egypt, thought nothing of erasing the name of a predecessor off an inscription in order to claim credit. An unknown king named Kudda, who apparently ruled at the city of Erech about 2450 B.C., has come to light in this way. A broken stone bowl, originally used as a votive offering in a temple, bears an inscription with Kudda's name filled in over an erased one.

Rulers often tried to prevent this royal custom by adding a curse to their writings, calling down awful fate on

any one who dared to erase the writing or add his own name. Whether Kudda defied such a curse cannot be learned, Prof. Stephens said, because the end of the inscription is missing.

Science News Letter, November 9, 1935

ASTRONOMY

Cloud of Island Universes Added to Known Space

A DENSE cloud of island universes, each of them similar to our own Milky Way, but so far out in space that they can be seen only with the most powerful telescopes, has been located near the southern constellation Horologium by Dr. Harlow Shapley, director of Harvard College Observatory.

Evidence of their existence first appeared in the largest existing catalogue of external galaxies tabulated during the past five years by Mrs. E. M. Lindsay of the Harvard astronomical staff. Almost all of the 7889 galaxies in the Horologium area contained in the catalogue were previously unknown, and quite understandably so, since nearly all of them are fainter than the fifteenth magnitude.

From a survey of the long-exposure photographs taken with the powerful Bruce telescope at Harvard's southern observatory at Bloemfontein, South Africa, from which the catalogue was made, Dr. Shapley has estimated that the metagalactic cloud is populated about twice as densely as space in general. Several denser concentrations or clusters of galaxies within the cloud, he has estimated, are populated as much as three times as thickly as average space.

Celestial Congestion

Just how thickly filled with galaxies this area is can better be understood from the fact that all of the 7889 galaxies recorded in the catalogue are in an area covering less than one per cent. of the total sky. This entire area, according to Dr. Shapley, is "a congested region," one which, by his definition, contains one or more galaxies for every five thousand trillion cubic light years.

The catalogue is part of a general program for the surveying of external galaxies in progress at Harvard, two others having been published during the past five years for other regions of the sky. In all of them celestial bodies are classified according to position, brightness, diameter, form and structure.

Previous to this catalogue for the Horologium area, the largest ever made was the famous "New General Catalogue," published in Ireland 50 years ago, containing tabulations for about 7000 bodies. This earlier catalogue, however, contains almost exclusively objects brighter than the fifteenth magnitude and covers the entire sky, while the Harvard one is limited to a very small area and deals almost entirely with bodies fainter than this magnitude.

Science News Letter, November 9, 1935

GEOLOGY

Famous Great Caverns May Be Younger Than Supposed

MAMMOTH cave, Carlsbad Cavern and other subterranean wonder-places do not need to have their ages estimated in millions of years. Some scores of thousands of years will suffice, in the opinion of Dr. James H. Gardner, oil geologist of Tulsa, Okla.

In a communication to the Geological Society of America, Dr. Gardner advances reasons for believing that most of the great limestone caverns have been formed since the Ice Age, and he offers a new theory to explain their origin.

The age of a cavern can not be accurately estimated on the basis of its stalactitic formations, Dr. Gardner contends. Stalactites, and stalagmites that pile up under their dripping points, are necessarily younger than the caverns in which they form, he points out. They may have started much later.

Stalactites often show in cross-section series of rings like the annual growth-rings of trees. This suggests that they have had alternating cycles of faster and slower formation, depending on the rate of flow and acid content of the water that forms them; but whether these rings represent years, with rainy-season abundance and dry-season scarcity, or whether they represent longer climatic cycles, Dr. Gardner will not venture to state dogmatically.

In any case, however, he declares, it is misleading to estimate age of dripstone formations simply from their bulk; and he feels that the sign in Carlsbad cavern, giving an age of sixty million years based on such a calculation, should be removed.

Dr. Gardner's theory of limestone cavern origin begins with the fact that they are all in thick limestone strata where they slope toward, and not away from, the rivers into which they drain, and the further fact that the lowest point in a cavern is always above the water level in the river. The limestone strata usually continue on the other side of the river, dipping deeper into the earth where they contain static water in porous beds—but never contain caverns below the river level.

According to his explanation the river valley, cutting ever deeper into the earth, has at some time in the past sliced through the sloping limestone strata. This permitted the water with which the stone was saturated to drain into the river, and also allowed a constant circulation of water down from the surface through the stone into the river.

Century after century this has gone on, and always the water flowing through the porous limestone has dissolved some of it and carried it away. Slowly at first, then more rapidly, the porosity of the rock has been changed to cavities, and these have enlarged and run together, forming the cavern.

Science News Letter, November 9, 1935

PATHOLOGY

Another Sinus Causes Trouble, Surgeons Told

ANOTHER sinus, besides the ones already so well known for the suffering they cause, can contribute its share of aches and pains, Dr. Chester H. Bowers of Los Angeles reminded members of the American College of Surgeons.

This sinus is known as the sphenoid. It is located far back of the nose, approximately in the center of the skull, lying close to the brain and perhaps in intimate relationship with half of the cranial nerves and important blood vessels. It is usually not involved in disease, but it may be the hidden cause of many disagreeable symptoms.

Headache, reflex pain over a canine tooth, pain or continuous burning in the throat, pain in the back of the head or even in the ear are among the symptoms which may be traced to trouble with the sphenoid sinus. Involvement of this sinus may also interfere with vision because the optic nerve is separated from it by a very thin wall.

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