

ARCHAEOLOGY

**Earliest Murder Trial
On Record Disclosed**

► THE earliest murder trial on record was described by archaeologists in Philadelphia recently.

The University of Pennsylvania and the University of Chicago announced jointly that a clay tablet unearthed in Iraq, where the ancient city of Nippur stood 4,000 years ago, is the oldest known record of a successful murder prosecution.

The date was about 1850 B.C. Three men and a woman were tried by a democratic court of justice for the murder of a temple official. The men were condemned to die before the murdered man's chair. The woman, his wife, was set free.

The tablet describing the trial was dug up by members of a joint archaeological expedition of the two universities. Written in the ancient cuneiform script and Sumerian language, it was translated by Dr. Thorkild Jacobsen of the University of Chicago and Dr. Samuel N. Kramer of the University of Pennsylvania Museum. Only a dozen-odd scholars in the U. S. can read this oldest known form of writing.

Science News Letter, March 25, 1950

AERONAUTICS

**Pilot Error Top Cause of
Personal-Plane Accidents**

► "PILOT error" was the cause of 758 fatal aircraft accidents in private flying during 1948, according to the U. S. Civil Aeronautics Board but the term covers errors in judgment as well as bad operation.

The conclusions of the Board are based on investigations made of the 850 fatal accidents of private planes in the United States during 1948. Private flying is what the Board calls non-air-carrier flying. Approximately 90% of the total, it states, were the result of "pilot error."

"Operating recklessly" was the cause of 41% of the 758 accidents, the report of the Board shows. "Failure to maintain flying speed" was the cause in 18.6% of the cases. "Continued Visual Flight Rules" into instrument weather was responsible in 14.9% of the fatal failures. These three causes together add up to approximately 75% of the 758 accidents.

In the list of pilot errors are three which together caused about 12% of the accidents. They are failure to observe aircraft or objects, misjudged distance, and improper flight training or supervision. Other errors include exceeding the stress limits of the plane, inadequate flight preparation, and inattention to fuel supply and valves. Several other causes are listed but the number of accidents caused by them was small.

In the three categories which include 75% of the accidents, plane stalling was involved in 60% of the cases. "It is this

high frequency of stalls in fatal accidents which indicates that the designer can do more than anybody else to reduce the fatal accident rate in personal craft," the report states.

"We do not have sufficient exposure data to evaluate the stall warning indicator from the standpoint of accident prevention," the Board continues. "We feel, however, that a good stall warning indicator can do much in helping pilots to keep existing aircraft out of stall accidents. Also, we believe that the stall warning indicator is a valuable flight instrument which can help any pilot to learn the limitations of his aircraft."

Science News Letter, March 25, 1950

GEOLOGY

**Elephant Story from Africa:
Elephants Know Their Rocks**

► OUT of Africa have come many elephant stories, but here is one that is down to earth and told by a geologist.

Elephants know their rocks, evidently, and they roam by preference on the sandstone part of the country and avoid the granite areas.

Dr. Herbert P. T. Hyde, of the Nigeria Geological Survey at Enugu, reporting to the British journal, *NATURE* (Feb. 25), tells of three instances, in three separated areas, where the elephants were observed to stick to the sandstone areas.

So pronounced is the preference of the elephants that the boundary line between two geological formations can be deduced from asking the natives how far the elephants circulate in the district.

Dr. Hyde is at a loss to explain the preference, except that it may be a question of food, chemical composition of the water or nature of the weathering soil.

Science News Letter, March 25, 1950

MEDICINE

**Virus X Either 'Flu or
Unknown Germ or Virus**

► YOU may think you are down sick with virus X, and a good many physicians are heard talking about virus X. But so far as the U. S. Public Health Service is concerned, there is no virus X disease.

Virus X victims either have influenza or they have a stomach and intestinal upset from some still unidentified germ or virus, public health officials state.

A good many outbreaks of so-called virus X disease have been investigated and tests made. It always turned out to be influenza.

The g. i. upsets—g. for gastro, meaning stomach, and i. for intestinal—used to be called intestinal 'flu. What causes them seems so far to be anybody's guess. It is not the influenza virus.

Science News Letter, March 25, 1950



ENGINEERING

**Volume, Density of
Snow Measured**

► VOLUME and density of hard-packed snow is quickly determined by a new, simple instrument revealed at the Army Engineer Research and Development Laboratories in Fort Belvoir, Va.

It is designed for use in extremely cold countries where there is a military interest in snow as a construction material in the snow engineering of roads, aircraft runways and other Arctic projects. The device can also be used in soils testing. Its development is the work of John E. Shea, a civilian project engineer.

The new instrument is called a Volumeter. It utilizes air displacement. Consisting basically of two air-tight chambers separated by a valve, the instrument is simple to operate and provides a method more satisfactory than other methods now in use.

For determining absolute volume, a sample is put in the upper chamber of the instrument, the chamber sealed, and air at 15 pounds per square inch pressure pumped in. Then the valve between the chambers is opened and the pressure drop noted on a gage. By extension of Boyle's gas law, a relationship between the volume of the sample and pressure may be established. In the instrument, direct volume readings are given without the need of calculations.

For density determination the process is similar except that the sample is put in a rubber balloon fitted to the neck of the upper chamber. By air escape the balloon collapses tightly around the sample. Following the same procedure as in determining volumes, the connecting valve between chambers is opened, and the apparent volume of the sample is read on the gage. Dividing weight by volume gives the density.

Science News Letter, March 25, 1950

PSYCHOLOGY

**Pleasurable or Painful
Emotions Affect Sleep**

► SEEING an emotion-arousing motion picture or worrying about an examination on the next day may both make a school child's sleep troubled and restless, Dr. Glenville Giddings, Atlanta physician, warned.

"Emotions, whether pleasurable or painful, interfere with normal sleep," he reported to a joint committee of the National Education Association and the American Medical Association.

Science News Letter, March 25, 1950

SCIENCE FIELDS

PSYCHOLOGY

Proposing Marriage Ideal Stuttering Starting Point

➤ DID you ever propose marriage or ask the boss for a raise? Then you have a pretty good idea how habitual stutterers got their start.

So says Dr. Joseph Sheehan of the University of California at Los Angeles who is helping to develop a speech correction clinic at U.C.L.A.

Most stuttering, he says, has its roots in an "approach-avoidance" conflict. This simply means a conflict between a desire to go ahead and an urge to hold back for fear of the consequences.

Typical "approach-avoidance" conflicts—such as a marriage proposal or a demand for a raise—generally provoke a certain amount of stuttering among people with normal speech habits, Dr. Sheehan notes.

Habitual stutterers, therefore, are basically no different from those who handle the King's English with assurance and aplomb. In most cases, however, their speech defects start much earlier—usually between the ages of three and five.

Dr. Sheehan's patients learn, first of all, to face their problem and overcome any feelings of shame or inferiority. Accepting the fact that they do have a handicap and that they are trying to overcome it is the basis on which stuttering can be treated.

Although Dr. Sheehan works primarily with adult stutterers, the best time to catch stuttering is when it begins in childhood.

Science News Letter, March 25, 1950

BOTANY

Yocco, Jungle Drink, Cuts Hunger, Fatigue

➤ THE pause that refreshes for jungle tribes of the upper Amazon is a drink called yocco (rhymes with cocoa).

Smithsonian Institution scientists recently described this strange beverage. They said it is non-intoxicating. But it can forestall both hunger and fatigue for hours.

Specimens of the jungle vine from which yocco is made have been sent to the Smithsonian's National Herbarium by Dr. Richard E. Schultes, U. S. Department of Agriculture plant explorer.

"I have made long trips through the forests and, taking nothing but yocco, have felt neither fatigue nor hunger," he says. Similar descriptions of the drink have been found in the notes of an earlier explorer, Guillermo Klug.

A very high caffeine content gives the drink its punch, botanists say. Yocco vine

seems to concentrate caffeine in the bark.

Americans who want yocco will have to go to southeastern Colombia, however. The vine couldn't be grown naturally in the United States, Dr. Ellsworth P. Killip, Smithsonian Curator of Botany, said.

Even in the Amazon valley there is a shortage. The Indians like it so much the wild plants are becoming scarce near the settlements.

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GENERAL SCIENCE

Children Involved in 42% of Divorces

➤ DIVORCE in families with children is more common than is generally realized, statisticians of the Metropolitan Life Insurance Company point out.

Almost half, 42%, of all divorces and annulments granted in the United States in 1948 were to couples with children.

About 313,000 children under age 21 were involved in the 421,000 absolute decrees granted that year. These plus their parents made a total of almost 1,200,000 persons in families dissolved by divorce.

The difference in the divorce rates between couples with and without children varies according to the duration of the marriage. For those with children the peak divorce rate, 15 per 1,000 in 1948, was reached in the fourth year of marriage. In childless families that rate reached a maximum of 44 per 1,000 couples in the fifth year of marriage.

Science News Letter, March 25, 1950

GEOLOGY

Niagara Falls Losing Its Horseshoe Shape

➤ THE famous "horseshoe" part of Niagara Falls is being bent out of shape by erosion. The United States Geological Survey has just issued a new map of the falls region, and a comparison with the old map issued 50 years ago shows that the curve of the horseshoe has moved 300 feet up the Niagara River and warped over to the right.

The two maps show that there has been much less erosion of the American falls, which takes only five per cent of the river's water. However, where those falls were straight across 50 years ago, now a slight dip has been eaten into the middle.

This doesn't really matter much because, the two maps show, in another 350 years or so, there won't be any American falls. If erosion of the Canadian horseshoe falls continues at the same rate, about the year 2300 they will be in a position to take all of the river's water.

The new large-scale map of the Niagara Falls area was made on a cooperative basis, with the New York State Department of Public Works augmenting federal funds. It is on a scale of one inch to 2,000 feet.

Science News Letter, March 25, 1950

FORESTRY

Wilt Disease Threatens Forests of Midwest

➤ A TREE disease known as oak wilt threatens to kill whole forests of the valuable hardwood in Illinois, Wisconsin, Minnesota and Iowa.

It has run rampant through northern Illinois since its first appearance eight years ago. A map released by the Department of Agriculture's Division of Forest Pathology shows it now has spread westward through a 300-mile arc.

Illinois State foresters report the wilt is killing oaks in a single growing season. They say it can prove a "major disaster" for Chicago residents who use recreational areas in northern Illinois oak forests.

The disease has infiltrated the entire southern half of Wisconsin and the southeastern corner of Minnesota. University of Minnesota scientists report it is killing large numbers of oaks near the Twin Cities, St. Paul and Minneapolis.

Science News Letter, March 25, 1950

AGRICULTURE

Increased Yields Promised From Hybrid Sugar Beet

➤ GREATLY increased yields of sugar beets are promised from a hybrid seed developed in East Lansing, Mich.

This new hybrid seed will do for the sugar beet farmer what hybrid corn did for the corn farmer.

The new seed, known as Hybrid 125, was developed by H. L. Kohls of Michigan State College. His development grew from a discovery made by Dr. F. V. Owen, a geneticist with the U. S. Department of Agriculture.

Dr. Owen found that the new sugar beets could be bred through use of plants that do not have the ability to produce pollen. Pollen from other plants is used to give hybrid sugar beet seeds that can be bred. These hybrids may give higher yields as well as increased disease resistance.

The new hybrid sugar beet is being grown in limited quantity now, and small amounts of seed are expected to be available to farmers in 1951. The hybrid variety carries about the same resistance against leaf spot as do commercial varieties, and also produces a beet of about the same sugar content.

Flowers that are perfect pollinate themselves. If they are not perfect the pollen comes from some other source. When a sugar beet is male-sterile, it will not pollinate itself but the proper cross-pollination will yield a seed that is 100% hybrid. The discovery of this male-sterility characteristic thus opened the way to production of 100% hybrid seed. Previously this had not been possible.

Science News Letter, March 25, 1950