

## From Page 135

haps so worded as to be understood only by the writer and the person addressed, old letters are often badly damaged. In Babylonian letters this means a broken or worn-down surface, so that the wedge-shaped characters that the scribe marked in the clay when it was soft, are no longer plain writing.

So frequent was this damage in the letters that Dr. Alexander read recently, that he found scarcely a tablet in perfect condition. Careless handling by Arabs who dig up relics, and the action of the elements, are held mainly responsible for the bad condition in which the old clay-brick letters reach translators' hands today. Archaeologists can scarcely complain of the Babylonians, however, for the correspondence that is being turned out today will provide far less helpful material for future civilizations to read and wonder over. So fragile is modern paper that it falls to pieces in record vaults, and no one need worry over archaeologists reading his private letters 4,000 years hence.

This article was edited from manuscript prepared by Science Service for use in illustrated newspaper magazines. Copyright, 1935, by EveryWeek Magazine and Science Service.

Science News Letter, August 31, 1935

### PLANT PATHOLOGY

## Sugarcane Substance Fights Virus of Mosaic

**S**UGARCANE fights mosaic disease, one of the worst of the ills that afflicts it, with a virus-paralyzing substance it forms in the growing tips of its stalks, a stuff that seems to be somewhat analogous to the germ-fighting "anti-bodies" formed in the bodies of human beings and animals when invaded by disease. This discovery has been made by Drs. E. W. Brandes and Julius Matz, plant pathologists of the U. S. Department of Agriculture.

They found that when juice extracted from healthy tissue taken from near the growing tips was mixed with juice from mosaic-sick plants, known to contain the virus, and the mixture then injected into healthy canes, the resulting infection was much less severe than "control" infections caused by mixed virus-containing juice. The nature of the virus-paralyzing substance is still unknown; as is, indeed, the nature of the virus itself. The latter belongs to the group of disease-causers known to science as "filter-passers," be-



### FILING CASES

Business men in Babylonia and other ancient civilizations handled mail orders and kept office files. This pigeon-hole file for storing papyrus records was unearthed in Dura-on-the-Euphrates, and is almost 2000 years old. (Courtesy Gallery of Fine Arts, Yale University.)

### BIOPHYSICS

## Plants' Fluorescent Light Clue to Photosynthesis

**F**LUORESCENT light, a strange luminescence given off by plants when they are subjected to ultraviolet and certain other kinds of rays, may yield a clue to the still unsolved riddle of how plants capture and use sunlight in making their own food out of water and carbon dioxide. This is the suggestion of Dr. James Franck, noted German physicist and sharer in the Nobel Prize for physics in 1925.

A plant's food-making activity and its fluorescence, Dr. Franck pointed out, are inversely proportional to each other. The greater the amount of sun-energy plants re-emit as light, the less they have to use in the tiny food-factories in their cells.

Science News Letter, August 31, 1935

### CHEMISTRY

## Pasteurization of Wine Recommended by Chemists

**P**ROFITING by the favorable experience of infants in arms and others with pasteurized milk, during the interlude of prohibition, the wine industry is now ready to adopt pasteurization as a routine process in the preparation of its bottled goods.

This fact became known through a report submitted to the American Chemical Society by J. E. Goresline and E. A. Beavens of the bureau of chemistry and soils, U. S. Department of Agriculture, and Carl S. Pederson of the New York State Agricultural Experiment Station.

The object of wine pasteurization, the authors of the report explained, is not to protect customers from any lurking diseases in wine but to prevent souring and other kinds of deterioration which might give the wine an undesirable taste. At the time of harvest the grapes and stems have many bacteria, molds and wild yeasts on them. After the fermentation process in the crushed grapes has proceeded to the desired point, the further growth of yeast and other microscopic forms of life must be stopped if the wine is to remain palatable. After investigating various methods of accomplishing this, the three scientists concluded that pasteurization is the best.

Either dry wines or sweet wines of low alcoholic content lend themselves to pasteurization. They recommended heating the wine in bottles at 130 degrees Fahrenheit for twenty minutes. Higher temperatures may give the wine a "cooked" flavor.

Science News Letter, August 31, 1935