

PLANT PATHOLOGY

Late Blight Baffles

Nine-year world-wide investigation fails to clear up mystery of costly 1946 late blight attack in United States by the same organism that caused the Irish potato famine.

► AFTER A nine-year investigation, agricultural detectives have failed to find the clues necessary to trap one of the world's deadliest killers, late blight.

Historically a dreaded enemy of man that strikes mysteriously and suddenly, late blight attacked tomatoes in the United States in 1946, causing an estimated loss of \$40,000,000.

A century before, in 1845, the same disease struck Europe, causing the tragic Irish potato famine. Late blight affected humans again in 1918, when it hit Germany and was one of the factors leading to the end of World War I.

In an effort to find clues that might help clear up the mystery surrounding late blight, known scientifically as *Phytophthora infestans*, plant pathologists at the U. S. Department of Agriculture's research center, Beltsville, Md., have surveyed the world.

"We do not have a clear cut explanation for the 1946 outbreak," Dr. Paul R. Miller, senior plant pathologist at Beltsville, said. Records indicate that the two severe and disastrous epidemics in Europe resulted from extended periods of favorable weather. A similar explanation cannot be offered for the United States' bout with the disease.

Heavy rains, Dr. Miller said, extending from June 1 through the middle of July offer the best conditions for the blight in the eastern states, as do heavy dews in the Midwest. But heavy rains do not always mean blight.

The late blight organism is very flexible and can surprise anyone. It can crop up suddenly and there is no telling where or when or how bad its infestation will be.

Extensive and intensive studies since 1946 have failed to turn up the needed knowledge of late blight concerning the way in which various forms arise and increase, the place and time of their origin, or the means of spreading.

As a direct result of the 1946 tomato blight in this country, the Department of Agriculture established the Plant Disease Warning Service in 1947. The Service does long-range forecasting, warning farmers of an impending outbreak so they may take precautionary control steps.

Scientists both here and abroad are continuing their studies in an attempt to solve the riddles posed by the disease, as well as to find a control for it.

Dr. Miller said that on the basis of what is known now, late blight infections will be very slight in the United States this year. For the first time in six years, tomato plants from Georgia, from which 90% of the nation's crop is derived, are reported free of the blight.

The disease is found everywhere in the world. To spread the results of the survey, the agriculturalists included in their report a summary of the findings written in Interlingua. Interlingua is an international language embodying word material that Western World languages have in common.

Science News Letter, June 11, 1955

PHYSIOLOGY

Multiple Brain Circuits

► THE HUMAN brain has multiple nerve circuits that take part in giving each person a feeling of time so that there is no confusion about whether it is morning or afternoon or whether something happened a few days ago or several years ago.

Studies showing this were reported by Drs. E. A. Spiegel, H. T. Wycis, C. W. Orchinik and H. Freed of Temple University School of Medicine and Hospital, Philadelphia, in *Science* (May 27).

The studies were made on 30 patients who underwent a special brain operation called thalamotomy. In this operation the cutting is done on part of the thalamus, the structure in the brain that serves as the main relay center for feelings of heat, cold, pain and the like to the thinking part of the brain.

The 30 patients had not been confused

about time or place before the operation. The operation was performed to relieve emotional disturbances or unbearable pain. After the operation, 19 patients were confused regarding the date, the season and the time of year. Another four were confused both as to place and time. One patient knew, from being told by her family, that she had lived in her home for five years, but she felt that it had been only a few weeks.

The time confusion only lasted a few days or weeks. In only one case it lasted six months. This, together with the fact that not all patients were time-confused after the operation, led the Philadelphia scientists to conclude that multiple brain circuits rather than a single nerve center are responsible for time orientation.

Science News Letter, June 11, 1955

CHEMISTRY

No More Dusty Rugs If Silica Protected

► CLEAN DIRT which will coat a rug or an overstuffed chair so thoroughly that dirty dirt can not touch it is being offered as a new application for a well-known product.

Sprayed on as a liquid which evaporates, this product, colloidal silica, is left as fine-grained particles which coat the irregularities in the fibers of the thread from which the carpet or upholstery material is woven. The treatment keeps dust particles from settling into these irregularities.

Colloidal silica is manufactured by the Du Pont Company under the trade name "Ludox." It is used to keep waxed floors from being too slippery, to protect adhesive coatings from heat and moisture, and for other purposes where its fine particle size gives it special usefulness.

Rugs and carpets protected against soil from dust are now coming on the market under arrangement with the manufacturers of Ludox. Preparations of the material for household use are being formulated. Research on methods of using it to protect paper and painted surfaces is now going on.

Science News Letter, June 11, 1955



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—Henry S. Galus, 164 Cedar Grove, New Bedford, Mass.

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