

Sick Cells

WATCHING the progress of a plant disease inside a cell still attached to a living leaf is the accomplishment reported to the scientific journal *Nature* by two British plant pathologists, F. M. L. Sheffield and J. Henderson Smith, of the great English agricultural experiment station at Rothamsted.

For some time, the occurrence of peculiar structures known as X-bodies has been known in cells of plants sick with mosaic or other virus diseases. Under the microscope they look like independent masses of protoplasm, moving about within the cell, putting out extensions or processes, and in general suggesting the behavior of the primitive animals known as amebae. For this reason it has been suggested that they are actually alive, and possibly a phase of the disease-causing organism.

In their researches, Mr. Sheffield and Mr. Smith have inoculated leaves of a plant with the disease, and then watched the progress of events in the transparent, stiff, hair-like cells that stand out from its edge. At first nothing is noticeable. Then tiny particles appear in the cell protoplasm, and are carried round the cell by its streaming motion. The smaller particles unite into larger ones, and these finally into the relatively big masses known as the X-bodies. This "growth" is reversible, however, for the masses may break up into smaller particles again and these once more reunite.

The two investigators have not been able to convince themselves that the X-particles are alive. Various chemical tests indicated rather that they are products of protoplasmic changes tending towards death in the cell.

Plant Pathology

Science News-Letter, May 31, 1930

Hydraulic Laboratory

PRESIDENT Hoover has signed the bill authorizing the construction of a \$350,000 National Hydraulic Laboratory at the U. S. Bureau of Standards.

Funds will probably be made available by Congress for use July 1 so the laboratory can be completed and its work begun during the coming year. Plans being prepared under the direction of H. N. Eaton of the Bureau of Standards staff are expected to be completed next fall.

Enough projects to keep the labora-

tory busy for a long time are ready to be submitted by the U. S. Reclamation Bureau, the Bureau of Public Roads and the Geological Survey. The laboratory will doubtless be completed in time to conduct some tests for Boulder Dam and the Chief of Engineers of the U. S. Army may request experiments in connection with Mississippi flood control. It is intended primarily for fundamental studies in hydraulics.

The erection of the laboratory comes as an indirect result of the efforts of a well-known hydraulic engineer, John R. Freeman, to make research in river hydraulics in this country comparable with that in Europe.

Surprised at advances abroad in the solution of river problems by model tests and anxious to bring this information to America and establish these methods in this country, Mr. Freeman provided scholarships to enable young American hydraulic engineers to study in Europe. These returning students and a book by Mr. Freeman describing European laboratories and methods, have largely caused the adoption of more modern practices and the establishing of up-to-date laboratories in this country.

Hydraulic Engineering

Science News-Letter, May 31, 1930

Preventive

CANNED salmon contains the substance which will prevent the frightful hard-times disease, pellagra, the U. S. Public Health Service has just announced. Canned salmon may therefore be substituted for meat in localities where pellagra is prevalent but where meat is scarce.

Hygiene

Science News-Letter, May 31, 1930

Social Doctors

SOCIAL doctors and social engineers, who are trying to help communities to overcome unemployment, delinquency and other troubles and assisting them to become healthier and more progressive, are to assemble for a National Conference of Social Work in Boston, June 8 to 14. Five thousand delegates, representing every state, as well as Canada and some European countries, will attend the national forum.

The unemployment problem will be given special consideration, speakers reporting on what employers are doing about it, what communities are doing, and what labor and the schools are doing. Old age as an economic problem will also be discussed. Other topics include

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prison tendencies in the United States, social aspects of immigration, family problems which may become social problems such as credit and installment buying, progress in tuberculosis control.

The social welfare of the Indians will be discussed at two special meetings.

More than forty organizations representing different types of social welfare work are to hold meetings during the conference period. These include such groups as the American Red Cross, the Family Welfare Association of America, the National Association of Travelers' Aid Societies, the National Community Center Association, the Salvation Army, National Federation of Day Nurseries, the Federal Council of Churches of Christ in America, and the National Tuberculosis Association.

Sociology

Science News-Letter, May 31, 1930

Smokeless City

COAL, the source of world power, illuminating gas, and vivid dyes, is going to yield still more of its black secrets, it can be announced with positive confidence. For during the next five years a combined research attack is to be made on it at the Carnegie Institute of Technology.

"There is no laboratory at present in the United States doing the work we have outlined," says Dr. Thomas S. Baker, president of the Institute. "There are many uses and by-products of coal still to be developed. Finally, there is the question of the smokeless city which can never be answered until a serviceable smokeless fuel has been discovered."

The research will cost \$425,000 and is being financed by the Buhl Foundation of Pittsburgh and six great American industrial concerns.

Technology

Science News-Letter, May 31, 1930

800 Mound Burials

DIGGING into the cluster of 54 mounds which rise above the flat plain of the Warrior River, Dr. Walter Jones, state geologist of Alabama, has encountered 800 prehistoric graves.

The skeletons are accompanied by household and personal articles such as were used by mound building Indians, who farmed the fertile valleys

CIENCE FIELDS

of the Mississippi before the arrival of white pioneers. Stone pipes weighing several pounds are among the most curious possessions found by Dr. Jones. Bowls shaped in effigy of humans, and of fishes, frogs, and ducks are other objects of exceptional interest. Shells and beads lie near the wrists and ankles of the skeletons, and jars for food and water still remain near the skulls.

Among the articles that show the kind of lives led by these Alabama mound builders are awls or drills suitable for leather-work, paint pots, bowls of shell, ceremonial pipes, bones of turkey, deer, and fish, and weapons, chiefly stone axes, arrow heads, and stone breast plates with rattlesnakes depicted on them.

Haphazard digging at this site of prehistoric life and death has been stopped by the state government which is now directing all excavations.

Archaeology

Science News-Letter, May 31, 1930

Not Poison

METHYL chloride, the refrigerator gas held responsible for a number of poisonings during past months, is not likely to poison food or beverages if it leaks into the interior of a refrigerator. This is indicated by tests conducted at the U. S. Bureau of Mines laboratory at Pittsburgh, just announced by the U. S. Public Health Service. The scientists conducting the research were W. P. Yant, chemist, H. W. Shoaf, toxicologist, and J. Chornyak, medical officer. The tests were made at the request of one of the firms manufacturing methyl chloride.

Deliberate efforts were made to render food poisonous by exposing it to the gas in full concentration for many hours, and to poison the water by bubbling the gas directly through it—conditions which would never occur in any but the worst kind of internal leaks. Various kinds of food thus treated were fed to experimental animals, but these showed no ill effects.

Because water would absorb more methyl chloride than food would, a longer test was conducted with it. Water containing the gas nearly to the point of saturation was given to a group of experimental animals for a period of nearly six months, and although they sometimes showed signs

of not liking the taste of it, they remained in apparent good health throughout the period. Only after they were killed at the end of the experimental period and their remains examined microscopically were any effects noted. It was discovered then that their kidneys showed some signs of strain from their long and severe service on the "poison squad."

Toxicology

Science News-Letter, May 31, 1930

Lepers Cleansed

THE release of eight persons who have been cured of leprosy at the National Leprosarium in Carville, La. has been announced by the U. S. Public Health Service.

To the eight who have been released this means the resumption of normal life with their fellow men.

To the scientists of the U. S. Public Health Service, the apparent cure of these eight, in addition to some 60 others released within the last eight years, represents further proof of the efficacy of the treatment with chaulmoogra oil as it is now carried out at the National Leprosarium, which is under the direction of the U. S. Public Health Service.

The eight just released included five men and three women. They had been at the leprosarium from two to eight years, coming from Minnesota, New York, Louisiana, California, Texas and Arkansas.

Medicine

Science News-Letter, May 31, 1930

Share Burrows

A PARALLEL for the old American tale about owls and rattlesnakes living in the same burrow has been found in New Zealand. Only the rattlesnake-owl story is now doubted by naturalists, while the new find is attested to as genuine by a correspondent in the British scientific weekly, *Nature*.

On eight or ten groups of islets near East Cape, North Island, N. Z., there are numerous tuataras, a strange lizard native to these islands. The same islets are inhabited by colonies of petrels, who nest in burrows in the ground. In many cases the burrows of the petrels are shared by tuataras during the nesting season, while in winter, after old and young petrels have departed for the north, the lizards hibernate in the burrows. Both petrels and lizards sleep during the day, departing at dusk to seek food. While a lizard may occasionally devour the solitary chick of the petrel, in general he lets it alone.

Zoology

Science News-Letter, May 31, 1930

Long Life

IF your parents lived a long time you have a better chance of reaching a ripe old age than your fellowmen, Dr. Louis I. Dublin, statistician of the Metropolitan Life Insurance Co., reported at the meeting of the Eugenics Research Association.

Heredity as well as environment affects the length of a man's life. The longevity records of over 70,000 white men were followed in Dr. Dublin's study from the date of their insurance at the beginning of the century to 1928.

The men were divided into two groups: those whose parents died before 50 years and those whose parents were living after 50. There were fewer deaths in the second group than in the first. Members of the second group moreover could expect to live on the average two and a half years longer than members of the first group.

These results were confirmed by studies made of records of 34 American and Canadian life insurance companies between the years 1869 and 1900.

Physiology

Science News-Letter, May 31, 1930

Gas Pneumonia

EXPERIMENTING, boylike, with rubber tube and the gasoline tank of an automobile, an eight-year old lad got an unexpected dry cleaning of his lungs, which resulted in pneumonia, when his companion blew on the other end of the tube. The case was recently reported to the American Medical Association, Chicago.

When the other end of the tube was blown into, the gasoline was forced into the boy's mouth. He choked and had a severe strangling spell, from which he recovered, but pneumonia developed. For four weeks he could taste gasoline and it could be smelled on his breath.

Gasoline is rapidly absorbed by the lung tissue, the report stated. The pneumonia that follows this absorption is not typical. The fever is not high and the rapid breathing continues for a long period. The inflammation of the lungs does not remain in one spot, but wanders about, suggesting that the gasoline fumes also wander about in the lung tissue, setting up inflammation in other spots.

Medicine

Science News-Letter, May 31, 1930