Dr. Noble suggests that there may be more which never are discovered because, luckily, they fail to get rabies and have their brains examined after death. By the time the discovery of the second brain was made and verified, both had been handled too much to make it possible to preserve them as museum specimens.

Science News Letter, August 14, 1943

BIOLOGY

Tumors Causes Traced

Tumor-causing bacteria, rendered harmless, are nevertheless able to produce harmful growths when hormones are added. Have cancerous effects.

➤ TUMORS ON PLANTS, that are very much like animal tumors, even to the formation of cancerous dead areas within themselves and eventually killing the plants, are being studied by Dr. Philip R. White at the laboratories of the Rockefeller Institute for Medical Research. They are unlike animal tumors in that they are started by easily detected bacteria, but they are like animal tumors in that they can be transplanted into previously healthy tissue — and these transplants do not need to have the originally causative bacteria in them to continue their malignant growth.

Dr. White's latest efforts have been in the direction of finding how these bacteria operate to start the tumorous growth. He has not got the whole answer yet, but he is able to report one or two interesting leads.

One thing he has discovered is that the bacteria can be robbed of their tumor-causing power by growing them on nutrient media containing the protein fraction known as glycine. Bacteria thus treated can live in the tissues of the host plant, but tumors do not develop at the point of inoculation.

However, if the top of the plant is cut off, and the tissues around the infected spot are treated with a solution of one of the growth-promoting substances or hormones, tumors again develop, although bacteria taken from these new tumors are still unable to produce new tumors elsewhere unless they are again aided by growth-promoting hormones. But if bits of the germ-free tumors are transplanted into healthy plants, they will develop into big and harmful growths.

That is, even though the bacteria have been rendered harmless by themselves, they are still capable of being links in a chain of harmful development, that can go on afterwards by itself without them. As Dr. White phrases it, the plant's cells have undergone a "permanent and irreversible cancerization."

Another lead followed by Dr. White has been the suggestion that the bacteria themselves are not the cause of the mischief, but that they act as carriers of a virus, much as mosquitoes serve as carriers of the yellow fever virus. The hypothetical tumor virus, it was suggested, might then carry on in the plant tissues without further help from the bacteria.

To test this, Dr. White sought a plant species that could survive a degree of heat that is sufficient to kill known plant viruses. Such a species was not easy to find, but he located one finally, a garden flower known as the Madagascar periwinkle. This delicate-looking but really tough little plant can survive prolonged exposure to a temperature of 115 degrees Fahrenheit.

Inoculated with the tumor bacteria and held at this temperature for ten days, nothing happened; but when the temperature was lowered to an ordinary greenhouse level the tumors developed normally. In the meantime the bacteria themselves had disappeared—but before they died they managed somehow to bequeath to the plant tissues a heritage of abnormal growth.

Science News Letter, August 14, 1943

INVENTION

Portable Electric Fan Used in Any Position

➤ TIMELY in these dog-days is the invention of Edward A. Ebert of Buffalo, on which he received patent 2,325,754. It is a compact, easily portable electric fan, about the size of an ordinary baking tin and entirely enclosed. It can be set on a desk or table or hung on the wall, to blow a steady breeze in one direction. It can be laid flat on its face, in which case it sets up a milder general circulation that will not ruffle hair or disturb loose papers. Or it can be laid on its back, again to produce general air circulation.

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DESTRUCTION—This picture shows how the flow of lava uproots trees and burns them in its path.

SEISMOLOGY

Volcano Unpredictable

Scientists studying action of Mexico's new volcano are not able to tell evacuating people when it may stop spouting lava and dust.

See Front Cover

➤ SCIENTISTS are not able to predict as yet when the new Mexican volcano, Paricutin, will stop erupting, Ralph R. Bodle, U. S. Coast and Geodetic Survey seismologist who has made an inspection of the volcano, declared on his return to the United States. (See *SNL*, May 22).

Mr. Bodle met a native who was helping to evacuate the people of the little town of Paricutin partially covered by lava from the volcano.

"Many learned people come here to study the volcano," said the native. "They write articles but with all their knowledge not one can tell you when the volcano is going to stop."

STUDYING ACTION—Ralph R. Bodle, of the U. S. Coast and Geodetic Survey, who took the photographs on the facing page and on the cover, is shown here with his instruments for studying the volcano.

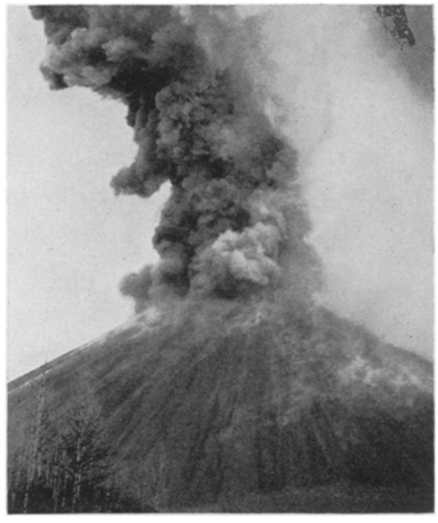
The government seismologist was on the spot to watch the antics of volcano when it let loose a new flood of lava in mid-June. The new phase of activity was ushered in by a strong earthquake motion that shook the whole countryside. The cone itself was obscured by a great cloud of dust. Then a third to a quarter of the cone collapsed due to lava forcing its way out under one side of the base. The lava flow continued for about 10 days until it reached the village.

Mr. Bodle's studies show that earth shocks at the city of Uruapan about 15 miles distant from the volcano were almost continuous for some 20 days before the volcano began to form in a corn field on Feb. 20. Some strong shocks that were felt on Feb. 22, he believes, were due not to the volcano but to a large earthquake centering off the west coast of Mexico. Shocks were felt throughout the immediate region of the volcano for some days after the lava appeared.

Strangely enough, the shocks continued in one locality about five miles southwest of the volcano long after they had died out elsewhere. At this place, known as Pechu, in the foothills of Tancitaro mountain, the shocks continued until about May 7, when they nearly ceased. A field party surveying the earth's magnetism near the volcano under the direction of Nelson C. Steenland of the U. S. Coast and Geodetic Survey camped there May 21 and felt three shocks which appeared to be related to explosions in the crater of the volcano.

In his exploration of the volcano Mr. Bodle noticed that the sand was hot at one place. Three or four days later a lava field had covered the site of his observations.

This caused him to credit the story heard in Mexico that before the volcano appeared, an Indian in whose field it started found that the ground was warm and went out there to sleep to ward off the chill of night air.



OLD CONE—This is how Mexico's new volcano looked before the later eruptions tore into its side and broke the cone at the top. To see how the appearance was changed, look at the illustration on the front cover of this week's SCIENCE NEWS LETTER.

CHEMISTRY

Home Dehydrated Foods Must Be Kept Dry

➤ WARNING against packaging home dehydrated foods in paper containers that are not moisture-proof, A. F. Wendler, technical section manager of Du Pont's Cellophane Division, pointed out that a poor container will result in waste of needed dehydrated food just as surely as a leaky seal will ruin a jar of canned tomatoes or string beans.

Although moisture-proof papers, such as cellophane, are satisfactory, they are not always easy to obtain because of the demand for war packaging. Supplies of the grease-proof cellophane known as "plain transparent" are sometimes available, but Mr. Wendler explained that this variety will not protect foods adequately.

Only moisture-proof cellophane should be used. This type seals to itself upon application of a hot iron, thus giving a simple test for identity.

No matter what packaging material is used, the food must be thoroughly dried. Careless dehydration permits moisture to remain on the inside of the larger pieces of food. After packaging, this moisture may be given off and cause the whole package of food to become moldy.