

METEOROLOGY

2,000-Day Pattern

► **INVISIBLE WEATHER PATTERNS** tend to repeat themselves every 2,000 days, dishpan tests by Dr. Dave Fultz of the University of Chicago indicate.

Colored dyes and aluminum powder swirling in the dishpan helped to show the world's weather may complete a cycle every five or six years. It is well known there are shorter periods numbered in days instead of years.

Discovery of the five-year cycle definitely does not mean that one day's weather can be predicted by looking at weather maps for that day five years before. What repeats is not specific weather, rain or sunshine or snow, nor even the visible patterns of the miniature atmosphere Dr. Fultz makes in a dishpan.

What does repeat is the mathematically computed but invisible transfer of heat. The 2,000-day pattern is superimposed on a 12-day pattern visible in the rotating dishpan.

This laboratory model of the atmosphere can be heated or cooled either from the outside, which represents the equator, or

from the center, which represents the North Pole. As the dishpan rotates on a phonograph-like turntable, dyes coloring the water and aluminum powder sprinkled on its surface allow scientists to watch the large-scale currents and eddies of atmospheric flow.

It is something like it would be to watch the daily weather map in a newspaper in motion. It is more like viewing, in a few minutes, a motion picture of the Weather Bureau's charts of the upper atmosphere after they had been filmed for a year.

The dishpan patterns duplicate on a small scale the so-called planetary wave, a world-circling band of air 30,000 to 40,000 feet above the earth's surface, flowing from west to east about half-way between the North Pole and the equator.

The 2,000-day pattern Dr. Fultz discovered in his dishpan model would be difficult to locate in the real atmosphere, because so many other factors affect weather it would almost certainly be hidden.

Science News Letter, March 31, 1956

MEDICINE

New Cancer Hope

► **FIVE PATIENTS**, all now dead of cancer, have given doctors and surgeons new hope of saving future victims.

The five originally had lung cancer of a kind that could not be operated on when they were first seen. Examination of their bodies after they died, however, showed no sign of cancer in their chests. The new treatment method had licked the original, inoperable cancers.

The patients lived from eight months to one year after the treatment. They died of cancer that had spread to their brains. If they had been treated earlier, they might have been cured.

The new treatment for inoperable lung cancer consisted in giving big doses of X-rays from a two-million-volt X-ray machine before operation. This destroyed enough of the cancer so the surgeons could open the chests and remove the rest.

These five cases were reported by Drs. Herbert D. Adams, David P. Boyd, C. R. Souders and Stewart H. Jones of the Lahey Clinic, Boston, at the meeting of the American Academy of General Practice in Washington.

While hoping the new method will save more lung cancer victims, the Boston doctors stress the importance of early chest exploration to prevent patients getting to the late, inoperable stage of lung cancer.

"The only way early diagnosis will be made is to open the chest and look inside," Dr. Jones said.

X-ray pictures and symptoms are not good enough for detecting all lung cancers in the early stages, he said. Too often the X-ray picture will show a little shadow that might or might not be lung cancer.

If the patient and his doctor wait three months or so to see whether the shadow grows, they may miss the chance of getting it out while it is still small and has not seeded itself to other parts of the body.

The operation of opening the chest to make sure is in itself safe and almost painless, by modern methods. The patient can go home from the hospital in a week if the operation shows no cancer.

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Questions

BIOCHEMISTRY—What new mother-baby relationship has been discovered? p. 197.

GEOPHYSICS—What is the only function of the third stage of vehicle lifting the satellite into its orbit? p. 195.

PUBLIC HEALTH—What is present cancer cure rate? p. 200.

SOCIOLOGY—How has Soviet science changed since Stalin's death? p. 198.

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ELECTRONICS

Electronic Devices Find Cancer Cells and Tumors

► **CANCER CELLS** can be sorted from normal cells by an electronic scanning and computing device.

The device, known as the cytoanalyzer, scans the microscope image of the cells, automatically sorts them according to their characteristics and then classifies them as normal or suspicious.

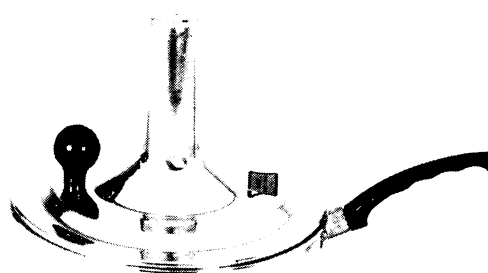
It can collect and record more cell measurements in a matter of minutes than a technician could in as many months using present manual methods, W. E. Tolles, H. S. Sawyer and R. C. Bostrom of Airborne Instruments Laboratory, the cytoanalyzer's developer, told a meeting of the Institute of Radio Engineers in New York.

Another scanning device to help in locating brain tumors was described by S. Arnov and G. L. Brownell of Massachusetts General Hospital.

An electronic instrument detects the amount of radiation given off by radioactive tracers introduced into the brain. The information is then automatically converted into a picture of the tumor location, showing increased concentration of tracer material where there are abnormalities.

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