



DEEP SEA CREATURE—A possibly new species of crinoid is shown here as it was caught in a photograph of a ledge of a newly-discovered cliff in the Gulf of Mexico. Due to fouling of the tripper weight, the camera is presumed to have fired late—almost horizontally; the angle of sea bottom slope is estimated as 45 degrees. The foot-long, branched object in the foreground is the crinoid. The far ridge, with stalked crinoids, is believed to be about 15 feet from the camera.

MEDICINE

Earlier Cancer Detection

Better and quicker detection of cancer expected through new apparatus to be used with Papanicolaou smear test. Device makes cancer cells show themselves.

➤ **EARLIER DETECTION** of cancer with consequent saving of lives should be possible in many more cases through a device developed by Drs. Robert C. Mellors and Reuben Silver of Sloan-Kettering Institute for Cancer Research, Memorial Center, New York.

The device is called a microfluorometric scanner for the differential detection of cancer cells. It was developed to be used with the famous Papanicolaou smear test. The Papa test, as it is known for short, takes advantage of the fact that cancers, even very early, small ones, shed cells as trees shed leaves. These exfoliated cancer cells can be found in the secretion or fluids from the organ where the cancer is.

In using the Papa test, the fluid is smeared on a glass slide, stained with appropriate dyes, and examined under the microscope.

Trained pathologists can recognize the cancer cells. One drawback to wider use of the Papa test for early detection of cancer is the need for persons with special training in recognizing the cancer cells.

The new device, reported in the journal, *SCIENCE* (Oct. 5), makes the cancer cells show themselves in a practically automatic way. It is based on the fact that when cells are stained with a basic fluorescent dyestuff, cancer cells combine with more of the dye than normal cells. When longwave ultraviolet light is shone on the stained cells, each cell shines but the cancer cells shine brighter.

The light the cells give off can be measured with a microphotometer. With the aid of an electronic counting circuit, the presence of certain types of cells can be made to register according to the light they are emitting.

Drs. Mellors and Silver hope that their instrument will make easier large scale screening of the population for cancer, particularly cancer of the uterus in early stages when proper treatment brings a high rate of cure.

Cells shed by lung cancers and found in the pleural fluid also show a quantitative difference from normal cells in the amount of the fluorescent dye they combine with and consequently in the amount of light they give off under ultraviolet. Whether the same is true for cancer cells from stomach, intestines and other parts of the body has not yet been determined.

Science News Letter, October 13, 1951

MARINE BIOLOGY

Discover Possible New Species of Crinoid in Gulf

➤ A POSSIBLE new species of crinoids, strange creatures somewhat related to starfish, has been discovered in the Gulf of Mexico.

Crinoids usually live rooted in the ooze or mud of the sea bottom, but this foot-high specimen was photographed attached to what appears to be hard rock on the ocean floor. It was found during a survey of the Caribbean area by the Woods Hole Oceanographic Institution's research vessel *Atlantis*.

The picture disclosing the new crinoid was taken of a ledge of a steep cliff, some 70 miles off the west Florida coast, discovered during the survey. Dr. Austin Clark of the Smithsonian Institution states that the crinoid is possibly "something quite new, as none of the stalked crinoids living attached to rocks by a terminal stem plate have so far been found in the Atlantic basin."

Science News Letter, October 13, 1951

MEDICINE

Disease-Causing Viruses Aid Battle Against Cancer

➤ **STRANGE DISEASE-causing** viruses from Africa and South America are now being used in the battle against cancer.

Almost 100 cancer patients at Memorial Hospital in New York City have been given this virus-against-cancer treatment during the past two years.

The treatment has not yet produced any cures. In fact, the doctors there "don't think we have ever done any patients any good," one of them said. But they keep on trying in the hope of hitting a virus that will do the job of killing cancer cells without harming normal cells.

This approach, selective killing of cancer cells, offers the best solution to the cancer problem, Dr. Geoffrey Hadfield, professor of pathology at the Royal College of Surgeons, London, declared at the meeting

of the Medical Society of the District of Columbia. He believes that scientists "are in sight of success in this direction."

The idea of using viruses to stop cancer is not new. For more than half a century doctors have reported occasional cases of a cancer patient improving remarkably when he had gotten some germ-caused disease.

Development of sulfa drugs, penicillin and other antibiotics which stop so many disease germs has led scientists at the University of California to try deliberately infecting cancer patients with a disease that can be cured in the hope it will stop the cancer. A few dramatic improvements have been reported, but they were only temporary.

At Memorial Hospital scientists found a number of viruses which would destroy cancer in mice and fowl without harming the animals. Some of these viruses do not, so far as is known, cause serious disease in man. It is these viruses which have been given trials on patients. Although the patients have not been helped except perhaps temporarily, the scientists have been encouraged because they occasionally find the virus in the cancer. This means that they are getting a virus which will select cancer cells to grow on in preference to other cells in the body.

Right now they are working first, to get human cancers to grow in an animal, such as a mouse. Then they are trying to get a cancer-killing but otherwise harmless virus to adapt itself to select these human cancer cells for its home.

Science News Letter, October 13, 1951

Wild mourning *doves*, trapped by wildlife officials, were dipped in brilliant aniline dye solutions before release so that hunters this fall will note and report leg bands, an aid in a study of their journeying.

There are 800 different kinds of *earthworms* in the world.

METEOROLOGY

Snow Prediction Method

► SUDDEN, HEAVY snowstorms—the kind that paralyze cities—will be predicted with a greater degree of accuracy and sooner this winter as the result of research done in the Weather Bureau's regional office in Washington.

Last winter the research paid off in predicting the great Ohio snowstorm. It might have helped to give a better prediction of New York's blizzard in 1947.

The heavy snows in Cleveland amounting to 22 inches were predicted because the weather pattern before the storm was remarkably like the weather pattern just before Cleveland's great snowstorm of November, 1913, when an all-time high of 22.2 inches fell. The weather maps for Nov. 8, 1913, might almost have been used to analyze the weather on Nov. 24, 1950.

Most sudden, heavy snowstorms are hard to predict. They do not cast their shadow before them, at least on the weather maps. It is for this reason that Conrad P. Mook, the Weather Bureau's research man for a ten-state region in the East, has tackled the problem.

He has gone over the records of almost 500 heavy snowstorms for the first 40 years of this century in the ten-state area. And he has noticed this remarkable similarity in weather patterns time and again. This coming winter, when he sees weather patterns which look as though they happened before prior to a storm, the forecasters will be alerted.

As a further help in forecasting storms, Mr. Mook has worked out the probability of one city getting heavy snow right after another city has received a thick blanket. Where it has worked out in the past that the same storm has hit two cities, forecasters will be alerted.

Next problem to be worked out is what causes these weather patterns which precede storms. Mr. Mook will search through all the variables which go to make up a weather pattern. He will try to discover what combination of speed of winds at various heights, temperature and moisture in the air would signify heavy snow.

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