

## MEDICINE

# Animal Cancer Cured

**Breast cancer in rats has been cured with hormone treatment. One dose of a cancer-producing chemical in food produced cancer, the National Academy of Sciences was told.**

➤ **EARLY TREATMENT** of breast cancer with certain types of female hormones has cured the cancer in some 200 rats. But it took only a single meal of a cancer-producing chemical to produce the malignancy.

Dr. Charles Huggins of the Ben May Laboratory for Cancer Research, University of Chicago, reported to the National Academy of Sciences meeting in Washington, D. C., that a single feeding of certain polynuclear hydrocarbons produced breast cancer in healthy female rats.

This raises the question of human consumption of harmful hydrocarbons such as may exist in food, air, the benzpyrene of cigarettes and other substances.

Although his laboratory experiments do not relate directly to humans, Dr. Huggins said that a systematic study of foods and food additives needs to be done. The cranberry scare was only one of many possibilities of danger.

In his laboratory experiments, Dr. Huggins said that ten hydrocarbons with special cancer-causing property have been recognized but that the one most effective was 7,12-dimethyl-benz(a)anthracene, or DMBA.

To produce the cancer, 50-day-old rats were given 20 milligrams of the DMBA, dissolved in oil, by mouth. Cancer of the mammary glands appeared in two weeks, becoming first visible in 20 days.

"It is possible to accelerate the development of the breast cancers or to suppress them entirely," Dr. Huggins said. "Pregnancy, at age 65 days, or the administration of progesterone solo enhances the development."

However, if the rats were given one of the several estradiols, or female hormones, occurring in the body, along with progesterone, another female hormone, the cancer was cured—extinguished entirely.

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## Harness Sun's Energies

➤ **THE SUN'S ENERGY** will be harnessed as a source of power for underdeveloped countries.

A need for new energy sources for economically backward countries has focused the spotlight on using the sun's tremendous outpouring of energy, Dr. Farrington Daniels of the University of Wisconsin reported to the National Academy of Sciences meeting in Washington, D. C.

Solar energy is within the reach of smaller countries because large amounts of money are not needed to conduct research on ways to tap the sun's energy, Dr. Daniels stated. Definite breakthroughs in solar energy research are already paving the way for

eventual full-scale practical use of the sun's energy.

Solar energy will soon be de-salting the oceans, powering satellites through space, heating homes and cooking meals. Some cooking units are already being used in Florida and solar fuel cells have helped keep the Vanguard I satellite broadcasting for three years.

New materials for utilizing the sun's rays were developed recently, Dr. Daniels said. Plastics that last for years are making solar units more efficient and new semiconductors are transmitting the sun's heat rays much better.

Although the United States and other highly industrialized areas will not have to rely largely on solar energy for quite some time, Dr. Daniels believes they will eventually run out of fuel and will turn to the sun as their energy source.

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## Power From the Ocean

➤ **OCEAN BOTTOM** sediments and sea water might soon be used as a source of electric power.

U.S. Geological Survey scientist, Dr. Frederick D. Sisler, has developed an "organic" fuel cell that produces electrical energy directly from decomposing organic matter. The electricity is generated by bacteria "burning" the organic matter.

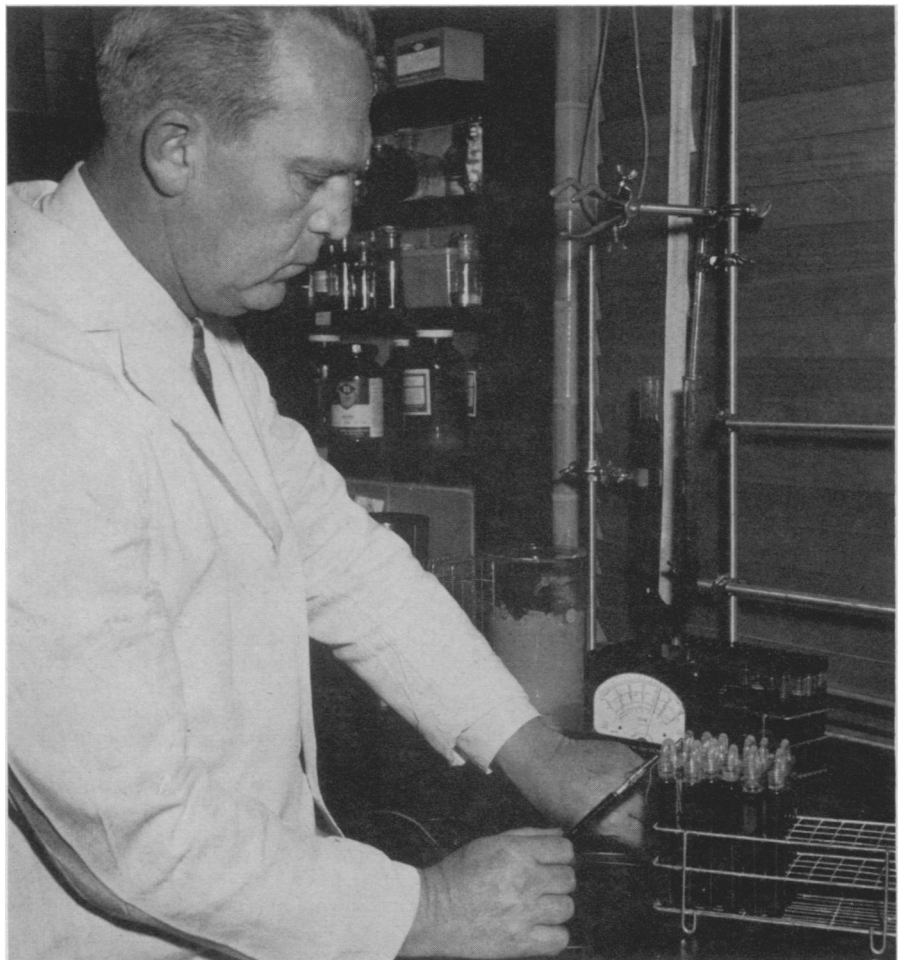
The fuel cell was exhibited by Dr. Sisler at the National Academy of Sciences meeting in Washington, D. C.

The biochemical fuel cell is divided into two compartments, one containing sea water, organisms and bacteria; the other sea water and oxygen. An electrode is dunked in each unit, and the resulting energy formed from the "burning" organisms is converted to electricity.

An inexpensive supply of both oxygen and organic matter for fuel can be obtained by using live algae, Dr. Sisler said. Such a cell could possibly produce electricity indefinitely from solar energy alone. It could be adapted for use in outer space.

Other virtually useless organic material such as sewage could be used as fuel. Many millions of dollars are now being spent to treat sewage when it is a potential energy source, Dr. Sisler stated.

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**BIOCHEMICAL FUEL CELLS**—Shown by Dr. Frederick D. Sisler