

## MEDICINE

# Antibiotics Cause Ills

USE OF ANTIBIOTICS appears to be the cause of numerous cases of a fatal disease usually considered to be a rarity, a Cleveland surgeon has found.

The disease is staphylococcal enterocolitis. Symptoms of the disease include vomiting, abdominal pain and severe diarrhea. It is caused by a specific organism that normal microorganisms, or flora, in the intestines can usually overcome. The Huron Road Hospital of Cleveland, Ohio, seldom has more than three cases in five years, Dr. Robert T. Murphy told colleagues attending the meeting of the American College of Surgeons at Atlantic City, N. J.

From October, 1958, through July, 1959, however, 431 patients exhibited diarrhea. The majority of these acquired the diarrhea after entering the hospital, Dr. Murphy said.

The staphylococcus was identified in 61 cases. Most of these patients had been receiving antibiotics, usually penicillin or streptomycin, when they entered the hospital.

The mortality rate among these patients was 33%, with 20 deaths in 61 cases. Both Dr. Murphy and his partner, Dr. David Samon, agreed that at least 15 of these were due to enterocolitis. Death is caused by dehydration, tremendous losses of salt and water, similar to the losses from cholera.

Now, any patient suspected of harboring the fatal organism is immediately taken off antibiotics, which destroy the normal bac-

teria needed in the intestine. The natural environment of the intestine is restored by administering fluids that contain these bacteria. Those patients who must be kept on antibiotics due to their original disease are given acidophilous milk.

This treatment has reduced the number of cases to zero, Dr. Murphy said. He also reported that this disease is probably a problem in all hospitals at this time.

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## ASTRONOMY

## 85-Foot Radio "Ear" To Hear Sun's Voice

AN 85-FOOT, steerable radiotelescope is now ready to eavesdrop on the radio voice of the sun.

The University of Michigan built the instrument with support of the Office of Naval Research. It is located at the Peach Mountain radio astronomy facility about 16 miles northwest of Ann Arbor, Mich.

The largest such telescope in the world designed for solar research, it will permit the first comprehensive study of radio emissions from the sun, particularly weak bursts of radio frequency noise that often accompany solar flares. Radio observations will be tied in with optical observations made at the University's McMath-Hulbert Observatory.

The parabolic antenna, weighing more

than 155 tons, can track the sun from sunrise to sunset. It also can listen to radio noise coming from galaxies millions of miles away, and tune in radio frequencies of 21- and three-centimeter wavelengths.

The instrument uses a newly developed broad-band traveling-wave tube radiometer reported to deliver ten times better performance than other similar receivers.

Science News Letter, October 17, 1959

## CHEMISTRY

## Copper Oxide Might Reduce Smog Gases

COPPER OXIDE is a "highly effective" catalyst for breaking down and thus eliminating the two gases that produce most of our smog, a two-year laboratory experiment by Dr. Srinivasa Sourirajan, assistant research engineer at the University of California, Los Angeles, has shown. Dr. Sourirajan's home is in Bangalore, India.

The smog gases are nitric oxide, formed during combustion, and hydrocarbons, which make up gasoline. In the main, they are emitted by auto exhaust when air and gas mix in a car's combustion chamber.

However, when nitric oxide is decomposed by copper oxide into nitrogen and oxygen, and hydrocarbons oxidized into carbon dioxide and water, both gases lose their pollution effects.

During his experiments, Dr. Sourirajan tested a large number of possible catalysts in a simulated auto exhaust system, at temperatures ranging from 600 to 1800 degrees Fahrenheit.

His next project is to design an apparatus that can put the copper oxide catalyst to work in an automobile's combustion chamber. The same catalytic method can be used to cut down the gaseous pollutants from oil refineries, blast furnaces or any combustion process, he points out.

Dr. Sourirajan's research is supported by a State of California grant, and he is assisted by two graduate engineering students, Jack Blumenthal and Mauro Accomazzo.

Science News Letter, October 17, 1959

## CHEMISTRY

## Translucent Ceramic Pressed Into Any Shape

A CERAMIC has been developed that transmits light, is strong, can be pressed into any shape during manufacture, resists heat and is easy to make.

Dr. Guy Suits, vice president of General Electric Company Schenectady, N. Y., described the new ceramic as "history making" in its combination of properties.

A first cousin of sapphire and ruby gem stones, the ceramic is made from powdered aluminum oxide. Its polycrystalline form enables it to withstand high heat without deforming. In this respect Lucalox, as it is called, is expected to extend the range of instruments now limited by heat resistance of their components, such as high-intensity incandescent lamps. It also may be used in infrared lamps for testing heat-resistance of missile nose cones.

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"SPASCORE" SCREEN—This satellite tracking screen will enable the Defense Department personnel to see the present and future positions and orbits of all satellites that pass through the nation's recently declassified detection "fence." Comdr. H. L. Nelson of U. S. Naval Research Laboratory, Washington, D. C., explains the purpose of "spascore" to Rudolph Lang, managing director of exhibits for the Business Equipment Exposition.