



**TELSTAR TIMING PULSE**—This photograph shows how the Telstar communications satellite was used to synchronize the clocks of the U.S. Naval Observatory and the Royal Greenwich Observatory. The center trace is the relayed time signal transmitted from Goonhilly Downs in England to Andover, Maine, at 1:52.30 p.m. EDT on Aug. 27. The lower trace is the pulse from the Loran-C station at Nantucket, Mass., the third cycle (hump from left) of which was used as the time reference. The upper trace is a marker pulse for calibrating the beginning of the five-microsecond Telstar pulse with the third cycle of Loran-C. The five-microsecond pulse shows as a drop in the center trace.

## MEDICINE

## Doctors Are Reading—

### Hypnosis for Anesthesia

➤ HYPNOSIS provided the major anesthesia for a brain operation, physicians will be reading in the *Journal of the American Medical Association*, 181:790, 1962.

The patient was a 38-year-old man in the Veterans Administration Hospital, Indianapolis, Ind., with an accidental gunshot wound in the right forehead that was causing epileptic attacks. The condition had caused him to be hostile and suspicious, and hypnosis relieved his anxiety.

During the four-and-a-half-hour operation only small amounts of a local anesthetic and a pain-killing drug were needed. General anesthesia was undesirable because the electrical activity of the brain had to be monitored during the procedure.

Drs. Som N. Nayyar, neurosurgeon, and John Paul Brady, psychiatrist, both of Indiana University Medical Center, Indianapolis, reported the operation.

### Stomach Freezing

Stomach freezing has replaced surgery for 86 patients with duodenal ulcer (p. 760). The technique consists of lowering the temperature of the stomach to about zero degrees Fahrenheit for one hour. A balloon is inserted into the stomach through which cold alcohol is circulated to achieve temperatures from four below zero to 10 above zero. This procedure appears to reduce the secretion of digestive juice containing hydrochloric acid, which is believed to be an irritant.

Immediate relief of pain with healing two to six weeks later was reported by Drs. Edward T. Peter, Eugene F. Bernstein, Henry Sosin, Arthur J. Madsen, Arnold I. Walder and Owen J. Wangenstein of the University of Minnesota Medical School, Minneapolis.

### New Antibiotic

Oxacillin, a "promising new antibiotic," has produced good results in more than 60 patients with infections resistant to ordinary penicillin. Among the seriously ill who were cured were six with pneumonia, five with severe head and neck infections, and three with infected burns.

Oxacillin is a synthetic penicillin five to eight times more active than methicillin against penicillin-resistant staphylococci. It is given by mouth and has minimal side effects. Drs. M. M. Kirby and Lona S. Rosenfeld with Jean Brodie, all of the University of Washington School of Medicine, Seattle, reported the study (p. 739) and said that oxacillin "represents an important advance."

### Doctors Who Smoke

Doctors have no right to claim a layman's privilege of ignorance on the question of cigarette smoking and cancer, Dr. Howard C. Taylor of the College of Physicians and Surgeons, Columbia University, said. Although some physicians have stopped smoking, the vast majority comfortably avoid the issue by saying they are not specialists

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## PHYSICS

## Clocks Synchronized Using Telstar

➤ TELSTAR, the communications satellite for sending TV pictures between continents, has been used to synchronize clocks in England and the United States to within one-millionth of a second.

This is a ten-fold improvement over the preliminary results of Aug. 25, when synchronization to within ten-millionths of a second was achieved. The time signals from space were coordinated more exactly on Aug. 27, Dr. William Markowitz of the U.S. Naval Observatory said.

Participating in the investigation with Dr. Markowitz were Dr. J. M. Steele of England's National Physical Laboratory, Teddington, who was at Goonhilly Downs, and C. A. Lidback of the U.S. Naval Observatory, who was at Andover, Maine.

Transmitting and receiving stations at Goonhilly Downs and Andover flashed simultaneous signals by way of Telstar between 1:40 and 1:58 p.m. EDT, when the satellite was "mutually visible."

Bell Telephone engineers assisted in the achievement, which was possible because of accurate predictions of Telstar's path made by scientists of the National Aeronautics and Space Administration.

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## BIOLOGY

## Imported Snail Controls Water Weeds, Disease

➤ A LARGE fresh-water snail, once imported from South America for use in aquariums, can control canal-clogging water weeds and the snail which carries snail fever, a tropical disease.

*Marisa cornuarietis* was tested and found successful against coontail, southern naiad, Illinois pondweed and salvinia. It is partially successful against the flowering water hyacinth and alligatorweed, U.S. Department of Agriculture research scientists said in Washington, D. C.

A native of South America, the snail was probably established in Miami when aquarium owners found the large snail too much of an eater and dumped live ones into a nearby canal. The snail is not found anywhere else in the United States.

Introduced into several ponds in Puerto Rico in 1957, the snail controlled heavy growths of water lilies and nearly destroyed another species of snail which carries the disease organism of snail fever or bilharziasis.

Control of aquatic weeds might help control disease inexpensively in many parts of the world.

Weed control would also permit fuller use of waterways for agriculture, transportation, hydroelectric power, fisheries and recreation.

Studies of *Marisa cornuarietis* were undertaken by plant physiologist D. E. Seaman from the Agricultural Research Service, according to *Agricultural Research*, 11:8, 1962.

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