



REMOTE TELEVISION—Soldiers shown here are operating by remote radio control a robot plane equipped with television. The unmanned aircraft sends back aerial pictures of sites up to 40 miles away, using light TV equipment developed at the Army's Signal Corps Engineering Laboratories, Fort Monmouth, N. J. Samuel Humes of New Paris, Pa., (left) operates the plane's ground remote-control box while William Howard of Baltimore Md., works the levers that point and focus the aerial camera.

MEDICINE

Fungus Lung Disease

► **SPOTS ON THE LUNGS** that look like tuberculosis in X-ray pictures may really be due to another disease, histoplasmosis, a lung ailment caused by a fungus.

The importance of distinguishing between the two was stressed in two reports to the National Tuberculosis Association meeting in New York.

One report was from Comdr. George E. Spencer, USNR, and Capt. J. A. C. Gray, USN, of St. Albans, N. Y., the other from Drs. John J. Procknow and Clayton G. Loosli of the University of Chicago School of Medicine, Chicago.

An economic reason was given by the Navy doctors. Histoplasmosis is not spread from person to person, as tuberculosis is, so long-term isolation in a hospital is not needed in cases of the fungus lung sickness. Proper diagnosis consequently can save much money.

Among 1,033 patients admitted from Oct. 1, 1953, to Oct. 1, 1955, to the U. S. Naval Hospital in St. Albans, which is the East Coast center for tuberculosis for the Navy and where some Air Force and Army personnel are also admitted, Comdr. Spencer said 26 were diagnosed as having histoplasmosis. Five also had tuberculosis.

The Chicago doctors said that, although the histoplasmin skin test can be used to determine infection, the complement fixation test is both a diagnostic and prognostic

tool. Complement fixing antibodies develop with histoplasma infection, he said, and thus the test can serve as a gauge of the stage of infection, with high titers found in severe cases.

Trials with a number of drugs in the treatment of histoplasmosis were reported by Dr. W. D. Sutliff of the University of Tennessee, Memphis.

The compounds tried had been used with only partial success, suggesting the need "for more potent therapeutic agents."

Science News Letter, June 2, 1956

PHYSICS

Soviet Atomic Journal Available in Translation

► **WHAT SOVIET SCIENTISTS** and engineers are doing in atomic energy is being told in a new journal of the Academy of Sciences of the USSR. A complete English translation is being issued in New York at \$75 a year.

Some of the subjects being covered sound like publications in U.S. journals: research reactors, accelerators, power reactors, metallurgy and technology of fuel and structural materials, prospecting, extraction and refining of atomic raw materials, isotopes, hot laboratories and radioactive waste.

Science News Letter, June 2, 1956

TECHNOLOGY

Signal Corps Develops Ultrasonic Quartz Cutter

► **ARMY SCIENTISTS** can now cut paper-thin wafers of quartz, a super-hard mineral, with a "sound slicer" that never touches it.

The Signal Corps Engineering Laboratories at Fort Monmouth, N. J., are perfecting an ultrasonic slicing technique that will give three times as many usable quartz wafers or crystals from a block of the strategic mineral as the best diamond saws. The crystals are vital for radar, guided missiles and radio communications.

The experimental slicer, designed by Raytheon Manufacturing Co., Waltham, Mass., simultaneously cuts 21 delicate slabs from a chunk of quartz. Further work is underway to make it meet military standards.

Quartz, like ordinary sand, is silicon dioxide, one of the most common chemicals on earth. However, the high grade natural quartz needed for electronics must be imported, principally from Brazil.

The slicer's bit does not touch the quartz while cutting, although it comes microscopically close. Boron carbide flows between the slicer and the quartz. As the tool vibrates, boron particles rapidly nick out tiny flakes of the quartz.

The diamond saw, used for over 20 years to cut quartz, can slice only 750 units from 12 pounds of crystal. The ultrasonic cutter can slice 2,250. Sound-sliced wafers are 12 mils, or twelve-thousandths of an inch thick, while the thinnest a diamond saw can cut is 33 mils.

Science News Letter, June 2, 1956

ORNITHOLOGY

Birds Use Fat for Fuel on Long Trips

► **BIRDS** use fat the way airplanes use gasoline.

The farther they have to travel, the more fat they put on.

Dr. Eugene P. Odum and Clyde E. Connell of the University of Georgia measured the amounts of fat on the bodies of birds accidentally killed during migration. Birds headed for Central and South America were fatter than those going to southern United States, the West Indies and Mexico.

The scientists learned the ruby-throated hummingbird, one of the smallest birds known, has enough fat when it starts its southward trip to carry it 800 miles. This discovery, reported in *Science* (May 18), supports the theory ruby-throated hummingbirds make a long overwater flight to Central America each fall. Until their departure time approaches, the birds have enough fat to carry them 385 miles, not enough to span the Gulf of Mexico.

Unlike the hearts of obese people, the birds' hearts were completely free of fat. All the other major organs of each bird studied, however, had gained fat.

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