

MEDICAL TECHNOLOGY

**Tiny Wireless Radios
Keep Watch Over Sick**

➤ TINY WIRELESS RADIOS, no larger than a lump of sugar, can monitor patients round the clock for heart, pulse rate, temperature and respiration, transmitting data to a central office.

The miniature units, placed against the fingertips, on the arm or elsewhere on the body, relay the physiological information to an antenna. No wire connections from patient to recorder are needed. From the antenna the data are carried by wires to a central viewing tube or recorded in ink on paper.

Built into a small compact unit, the transmitters can be comfortably worn, providing a constant check on patients without any stress or disturbance to them.

The "radio-nurses" were developed by Fred L. Hatke of the Radio Corporation of America Laboratories, Princeton, N.J., under the direction of Dr. Vladimir K. Zworykin. Dr. Zworykin predicts that the first application of these units probably will be in surgical recovery rooms where continuous patient monitoring is essential.

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MEDICINE

**University of Cincinnati
Gets Second Large Grant**

➤ INTENSIVE STUDIES of man's illnesses will be conducted with patient volunteers in a small patient-centered research unit opening in a few months at the University of Cincinnati Medical Center. The National Institutes of Health gave the college a second seven-year grant to establish a General Clinical Research Center there.

An initial payment of \$150,000 to defray part of the costs of the first year has already been awarded UC. The ultimate amount of the award has not been determined, though it will probably be between one and two million dollars.

The UC center will start with a four-bed unit at Cincinnati General Hospital (teaching hospital in UC's Medical Center). It will expand eventually to a 20-bed unit, a small research hospital to be located in General's new hospital, now in the planning stage.

Dr. Harvey C. Knowles Jr., UC professor of medicine and director of the University's Metabolism Laboratory at General Hospital since its establishment in 1953, will be principal investigator with administrative responsibility for the center.

One of the greatest advantages in such a center, Dr. Knowles pointed out, will be the opportunity for many departments of the medical college to participate in the coordinated research program.

In October Dr. Noble O. Fowler, UC associate professor of medicine, was named principal investigator for a seven-year grant totaling \$1,204,500 for heart research. That program concentrates on animal investigation while the new center will be patient-oriented.

Both grants support research expenses but

cannot be used specifically for teaching expenses. However, graduate and undergraduate research fellows will work in the unit, interns, residents, nurses and dietitians will have contact with it, and its impact on health, science, education, and patient care will be most beneficial.

Dr. Knowles already has a long list of studies planned by various departments of the College of Medicine for the new unit.

These include work in mineral metabolism, particularly on effects of endocrine gland disorders on mineral metabolism; diabetes and carbohydrate metabolism; lipid (fat) chemistry and its relationship to hardening of the arteries; nutrition and nutritional aspects of blood disorders; effects on body metabolism of X-ray radiation; connective tissue diseases; kidney physiology; emotional effects of certain disorders, and actions of drugs potentially helpful in treating cardiac illnesses.

UC's grant is one of nine awarded simultaneously in eight states and Puerto Rico by Surgeon General Luther L. Terry of the Public Health Service for the Division of General Medical Sciences of the NIH.

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OCEANOGRAPHY

**Space and Sea Systems
Combined to Study Seas**

➤ TELEMETRY EQUIPMENT normally used to explore outer space will now probe the ocean depths.

The telemetry equipment will be combined with sonar systems and tested in 10,000 feet of water.

Applications of the experimental acoustic frequency modulation system, which uses no cables or connecting devices, include transmission of underwater research data, study of undersea biomedical problems, underwater weapons research, and geophysical experimentation for oil exploration.

Researchers D. E. Campbell, R. J. Cyr and C. Crosier of the Bendix Corporation's Pacific division, North Hollywood, Calif., explain the system in *Electronics* magazine, 35:53, 1962.

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IMMUNOLOGY

**Sewage Study May Guide
Oral Polio Vaccination**

➤ WEEKLY STUDIES of community sewage in a search for wild polioviruses may guide public health authorities in starting an oral polio vaccination program.

Three Nova Scotian scientists report studies from June to September, 1960, in *Canadian Medical Association Journal*, 85:1419, 1961, in which both type one and type three polioviruses were found in sewage specimens. The same summer a paralytic polio epidemic of type three occurred in New Brunswick.

Drs. R. L. Ozere and C. E. van Rooyen, with Ruth Faulkner of the Virus Laboratory, Department of Public Health, Nova Scotia, reported the finding.

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ENTOMOLOGY

**Beer Bait Attracts
Wasps in Australia**

➤ BEER is being used in a campaign to protect \$225,000,000 worth of Australian woodlands menaced by the sirex wood wasp.

Twelve glass wasp-traps were hung on trees near Woori Yallock, where the sirex has been found for the first time on the Australian mainland. Each trap contained half pint of beer mixed with water.

The mixture of beer and water is planned to attract the sirex into traps which look like coffee percolators with a tube-shaped opening in the bottom. The traps were being used as an experiment.

While an expert set the traps and sprayed with insecticides, a squad of Forest Commission workers burned affected timber. A factory where infected timber was first noticed has been closed.

Aerial spraying of the whole area, 40 miles northeast of Melbourne, has already started in an attempt to knock down the wasps on the wing.

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ASTRONOMY

**Moon's Distance Found
Using Four Methods**

➤ THE MEAN DISTANCE from earth to the moon is 238,866 miles, and that figure is accurate within a mile, more or less.

The value is based on three experimental methods. A fourth method gives a figure within about eight and a half miles, Mrs. Irene Fischer of the U.S. Army Map Service reported.

The 238,866 miles is nine miles more than the previously accepted figure, which has been used for decades. The previous value was determined by the classical method of direct observation of the parallax of the moon at its mean distance from the earth.

Two other methods now also used for experimentally finding the moon's distance are by timing the disappearance and re-appearance of stars as the moon passes in front of them, and by bouncing radar signals off the lunar surface.

The fourth method for determining the distance to earth's only known natural satellite is by using orbital theory, Mrs. Fischer told the Philosophical Society of Washington at its meeting in Washington, D. C.

Included among the difficulties in finding the moon's distance, she said, are the facts that the sun affects the moon's orbit and that the model of earth used in the theory is one in which such factors as the radius, mass and degree of flattening are not accurately known.

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CE FIELDS

VITAL STATISTICS

City Births Go Up 31% During 10-Year Period

► A 31% INCREASE in the number of births in United States cities during 1950-60 reflects the increasingly urban character of the Nation.

Latest figures issued by the U.S. Public Health Service show that one-third of all 1960 births were to residents of the 24 metropolitan areas with a million or more inhabitants. During 1950-60 both the general population and the number of births increased in these urban communities.

Minneapolis-St. Paul registered the highest birth rate in 1960 with 27.5 per 1,000 enumerated population. The lowest rate was 20.2 for the Paterson-Clifton-Passaic, N. J., area.

The national 1960 birth total was 4,257,850, of which 1,445,304 occurred in the 24 large metropolitan areas. New York City residents alone contributed 157,706 live births. Los Angeles County reported 136,960.

About 300,000 infants were added in 1960 to the population of the New York-North-eastern New Jersey consolidated area alone. This is equal to the total population of a large city such as Norfolk, Va.

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PSYCHOLOGY

Quick Judgments Not the Wisest

► A "SNAP JUDGMENT" is likely to be a bad judgment. This was found in an 18-month study of decision-making among 202 U.S. Air Force ROTC cadets at Catholic University, Washington, D. C., in a joint project of the University's psychology laboratories and ACF Electronics, a division of American Car and Foundry Industries.

Those who consistently made good decisions used all the time available to them, the study showed. And as might have been expected, it was found that intelligent individuals make better decisions.

The vocational interest of an individual seems to have no effect on his ability to make wise decisions. Within a group of persons with varying occupational interests—for example, a group of students interested in science, business, and engineering—no relationship was found to exist between their interests and their ability to make decisions. Neither does the "drive" or energy of an individual have any bearing on his decision-making ability.

Mildly maladjusted individuals are as capable of making sound, fast decisions as are the well-adjusted.

Decision-making, for the purposes of the study, was measured on a device called the Decision Making Ability Test, DMAT-I. Each subject was presented with numerical

problems and called on to decide how much to risk at what odds to be sure of an advantageous "payoff."

Results of the study, which is in a preliminary phase, were made public by Dr. John Townsend, director of Catholic University's psychology laboratories, and Jack Huffner, manager of ACF Electronics' human factors engineering department.

Later phases of the investigation will determine whether man can learn to make good decisions, the effects of stress on decision-making ability and the best methods of presenting information to decision makers.

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ORNITHOLOGY

Number of Whooping Cranes Unchanged

► THIRTY-SIX wild whooping cranes—the same number as in the previous year—have settled down in their winter headquarters along the Gulf of Mexico on Aransas National Wildlife Refuge in Texas.

The latest count by the Department of the Interior shows that five were born last spring.

In the fall of 1960, there were 30 adults and 6 young whooping cranes on the Aransas Refuge, all of which migrated north last spring to their nesting grounds near Great Slave Lake in Canada.

Both the 1960 and 1961 figures show the largest number of wild whoopers known to be in existence since the count began in 1938-39. There are also seven birds in captivity. There has been no trace of five adult whoopers that went north last spring. They presumably have died of natural causes.

The whooping crane is living evidence of man's disregard of wildlife and other natural beauty. Tottering on the brink of extinction, the entire whooping crane colony could be wiped out easily in a natural disaster.

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ENTOMOLOGY

Turnips Yield New Insecticide

► A NEW INSECTICIDE that obviously does not affect man has been found in turnips.

The compound extracted from the turnip, two-phenylisothiocyanate, has been found as active as many insecticides now in use. The compound was tested and found effective against houseflies, aphids, Mexican bean beetles, German cockroaches and mites.

Although man has been eating turnips for centuries without ill effects, its insecticidal effect was undiscovered until a number of "vinegar flies" placed in jars of mashed raw turnip died.

Drs. E. P. Lichtenstein, F. M. Strong and D. G. Morgan, of the University of Wisconsin, Madison, report their findings in the current issue of the Journal of Agricultural and Food Chemistry.

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CONSERVATION

Save Antarctic From Man; Preserve Advocated

► THE ANTARCTIC, the only area in the world uncontaminated by man, must be preserved as an international sanctuary.

Scientific expeditions are fast changing this uncontaminated situation, according to Dr. Robert Cushman Murphy, Lamont curator emeritus of birds at the American Museum of Natural History, New York. Dr. Murphy advocates the creation of an international sanctuary in the entire Antarctic, where nature may remain relatively untouched by the savage destruction of man.

In Science, 135:194, 1962, he points at the brutalities and wanton destruction by man and his associates in these southern stretches as well as throughout the world.

Hundreds of tons of seals have been killed for food for dogs, he said. Penguins and other birds are killed for no reason. Dogs have been turned loose to kill animals and birds not used to predators.

By creating the sanctuary, scientists could study life in connection with the original intent of nature.

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MEDICINE

Eye Symptoms May Hide Unsuspected Disease

► ROUTINE EXAMINATIONS of a patient's eyes in the family doctor's office may give clues to unsuspected systemic disease.

A general practitioner, writing in GP, 25:100, 1962, published by the American Academy of General Practice, lists diseases from measles to diabetes that may be discovered as a result of eye examinations.

Dr. Harold I. Farber of Reading, Pa., states excessive blinking of the eyes is not uncommon and is usually caused by anxiety. When the general practitioner finds this condition, he should look for the cause of the anxiety reaction.

Protrusion of the eyeballs should make a doctor suspicious of hyperthyroidism, Dr. Farber states, adding that drooping of the upper eyelids should suggest the possibility of myasthenia gravis, a chronic and usually fatal disease marked by progressive muscular weakness.

Other conditions that may be uncovered by eye examination include toxemia of pregnancy, hardening of the arteries, high blood pressure, multiple sclerosis, jaundice and central nervous system syphilis, Dr. Farber explains.

Even when a physical examination is negative, he says, a patient might describe transient loss of vision in one eye that would indicate either early multiple sclerosis or intermittent blocking of an artery supplying blood to the visual center located in the back part of the brain.

The patient's history also might disclose blacking out of half the patient's visual field, indicating that a stroke had occurred, the physician said.

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