

## PUBLIC SAFETY

## Choose Children's Toys With Eye to Safety

► REMEMBER the dangerous rubber toy called Flubber when shopping for children's Christmas presents, a skin specialist warns. Although Flubber was taken off the market last March because it was causing a skin irritation comparable to measles rash, the specialist said in Chicago that other toys could be dangerous to vital organs.

Dr. Gordon C. Sauer of the University of Kansas Medical School, Kansas City, Kans., told the annual meeting of the American Academy of Dermatology, Inc., that quick investigation is necessary when a toy is suspected of containing toxic or irritating materials.

Dr. Sauer was asked by the U.S. Food and Drug Administration to undertake a "crash" study of Flubber early this year to find out what was causing the skin irritation that later led the Kansas State Board of Health to ban the toy's sale slightly more than a month after it went on the market in Kansas City.

Dr. Sauer said that although the present law seems adequate to protect the consumer from toxic substances, a strengthening of the act is needed to avoid delay in finding potential dangers.

Dr. Sauer studied numerous cases of skin irritation caused by Flubber, conducting "patch" tests and "use" tests on volunteers. He polled other skin specialists and representative schools in the Kansas City area, and found that 40% of the children who had played with the rubber toy had skin reactions.

Tests proved that certain oils in the rubber caused a primary skin irritation, mostly around the roots of the hair.

It was learned from the Food and Drug Administration that at least one other dangerous toy in addition to Flubber was taken off the market because it contained material that could easily burst into flame. This was a stuffed imported bird toy.

The Hazardous Substances Labeling Act covers thousands of packaged materials, including toys, brought into homes.

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## MEDICINE

## Prevent Tumor Spread With Thyroid Hormone

► SOME DAY doctors may give cancer patients small doses of thyroid hormone just before operating on them to remove their tumors. The purpose: to prevent new tumors from forming.

A patient with a malignant tumor often has millions of cancer cells circulating in his bloodstream. These cells sometimes do not take root and form new tumors until after the first has been removed by surgery.

Evidence that the growth of new tumors may be triggered by the stress of the operation or that of radiation treatment was reported to the 49th clinical congress of the American College of Surgeons in San Francisco by Dr. George J. M. Slawikowski

of Walter Reed Army Institute of Research, Washington, D. C.

He said animal experiments he had performed showed that operations could spur tumor growth. He performed abdominal operations on part of a group of experimental animals, then planted cancer cells under their skin.

Twice as many of the operated animals developed tumors as did animals not having operations, he reported, but only if the cancer cells were implanted within 48 hours after the operation.

He then tried removal of various endocrine organs, but found this increased the incidence of tumors.

Other investigators had found that thyroid output decreased during stress. In his latest experiments, Dr. Slawikowski has verified, with both rats and human patients, that thyroid output is reduced in the immediate postoperative period.

Noting that hypothyroid and postoperative patients are more susceptible to infection, Dr. Slawikowski suggested a reduced supply of thyroid hormone might also reduce the body's natural resistance to the invasion of cancer cells.

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## PUBLIC HEALTH

## Danger of Private Wells and Tanks

► PUBLIC HEALTH is being endangered by setting up individual wells and septic tanks on the fringes of our cities.

These facilities can become faulty, states Dr. Luther L. Terry, Surgeon General of the Public Health Service, and menace the community in suburban areas of the country. They rarely provide a permanent solution to the problem of obtaining water and disposing of wastes, said Dr. Terry, who believes the only real answer for these areas is community systems of water supply and waste disposal.

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## ARCHAEOLOGY

## Aboriginal Drawings Found by British Team

► ABORIGINAL cave drawings, some probably centuries old, have been discovered in a hidden creek near a remote central Australian salt lake by a British Royal Navy party on a biological surveying expedition.

Crudely-drawn human figures, a picture of a spoked wheel, and primitive patterns were found on cave walls not far from Lake Amadeus, 200 miles southwest of Alice Springs. Bones littered the caves where the drawings were found, and there was evidence of very old fireplaces.

Eight men, including four officers, from the Sydney-based Fourth Submarine Division took part in the 15-day expedition, covering 4,500 miles by car, train and land rover, directed by the Australian Museum at Sydney. Leader of the expedition was Lt. H. M. White, R.N., of Great Britain's Jersey Channel Island.

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# IN SCIEN

## GEOPHYSICS

## Earth's Upper Mantle Not Uniform Under U.S.

► THE TOP PART of the earth's upper mantle, down to about 600 miles below the surface, is not uniform under the United States, scientists have learned from studying records of the underground atomic bomb explosions in Nevada.

The U.S. is the only place in the world where this information is now available, Dr. Anton L. Hales of the Southwest Center for Advanced Studies, Dallas, told a National Science Foundation colloquium in Washington, D. C.

A global analysis of the heat flowing to the surface from the earth's innards and a worldwide analysis of the earth's gravitational field from satellite observations show remarkable similarities, he said. Scientists are now seeking to learn why these similarities should occur.

Dr. Hales noted that until quite recently the only way to study the earth's structure was from records of earthquake waves.

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## PUBLIC HEALTH

## Suit Dismissed By Krebiozen Backers

► KREBIOZEN backers in Chicago have drawn in their horns now that the Government's case has become so strong against their discredited cancer treatment, a Food and Drug Administration official told SCIENCE SERVICE.

Dismissal of an expected hearing at the U.S. District Court in Chicago was asked by the lawyer of Dr. Stevan Durovic, Krebiozen's developer, because the question of the investigation is now "moot." This means that any practical significance to the original Durovic suit has been lost.

Dr. Durovic's suit, designed to prevent FDA from investigating the so-called drug, was filed before FDA barred interstate shipment of Krebiozen. The controversial drug, found by Government investigation to be a body chemical creatine, can now be sold only in Illinois.

The FDA official who discussed the case in Washington, D. C., said it was his "guess" that the "moot" part of the question followed the Government's recent filing in court of the last piece of evidence needed for fraud charges against the sponsors of Krebiozen.

Krebiozen sponsors were charged with selling the so-called drug to thousands of patients at a "donation" cost of \$9.50 per injection for about 13 years, when the actual cost of each dose was about ten cents.

The law prohibits the selling of investigational drugs.

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# CE FIELDS

## BIOCHEMISTRY

### Basic Chemistry of Life Seen Revolutionized

► DISCOVERY of fibers resembling deoxyribonucleic acid (DNA) in mitochondria—structures that lie in the fluid surrounding the nucleus of the cell—could revolutionize present concepts of the basic chemistry of life, the American Cancer Society reported in New York.

Until now, DNA, the stuff that trait-bearing genes are made of, has been thought to exist only in the cell nucleus. What DNA is doing in mitochondria is open to speculation. But if the finding, in chick embryo cells, applies to cells generally, it could be a first step in a major discovery in understanding the links between mitochondria formation and function—even to the formation of some viruses.

An American couple, Drs. Sylvan Nass and Margit M. Kahlbrock Nass, found the DNA-like material sprinkled through cytoplasm during their postdoctoral fellowship study at the Wenner-Gren Institute for Experimental Biology at the University of Stockholm in Sweden.

The evidence can be interpreted in relation to both the generally accepted view that DNA carries genetic information, and the genetic and cytological evidence implying that mitochondria are self-duplicating structures.

The mitochondrial DNA might be an organism within an organism like a fetus in the uterus. It might be a source of gene DNA that eventually goes to the chromosomes. It might be DNA manufactured in the nucleus and sent to the mitochondria for storage or other purposes.

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## BOTANY

### High Electrical Fields Damage Plant Growth

► ORCHARD GRASSES grew less and their leaf tips were burned when the plants were subjected to high electric fields. The plants also appeared to be darker green than normal.

These and other results definitely establish the fact that an environmental electric field influences plant growth, states Dr. L. E. Murr of Pennsylvania State University reported in *Nature*, 200:490, 1963.

The results showing damage to plants are also in opposition to former studies stating that electrical fields can benefit plant growth.

By placing aluminum wire mesh electrodes below and above the soil where the seedlings grow, Dr. Murr established an electric field with a potential gradient volts as high as 80,000 every 3.28 feet.

The burning of the leaf tips is similar to mineral deficiency burning but quite dif-

ferent in appearance. It was usually first detected after the plants were several inches high. The damaged tip zone showed an absence of epidermal or outer layer cells.

Biochemical mechanisms responsible for the plant cell damage are not fully understood, explained Dr. Murr, but it seems logical that some ionization phenomenon is involved. Dr. Murr believes that the electrical field stimulated respiratory enzymes in the plant cells to such an extent that their concentration increased by more than 180%.

By tending to slow down respiration of internal cells, this effect caused damage to the outer cells.

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## NUTRITION

### Ancient Brew Revived By Modern Methods

► THE ANCIENT honey-wine drink, mead, is being up-dated by modern methods. Scientists at Cornell University, Ithaca, N.Y., have spent ten years of research to create the world's first commercially feasible sparkling mead, a drink dating back to biblical times, and once the national drink of England, from about 1200 to 1600 A.D.

The tasty drink results from proper yeast, vitamins, special aging and temperature control, selection of proper honey and bacteria control. The necessary workers in processing the ancient and modern drink, the honeybees, have not changed their basic work patterns during the centuries.

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## PSYCHOLOGY

### Rat's Infancy Affects Her Offsprings' Ways

► DR. SIGMUND FREUD'S ideas about the influence of early experiences on later life are being pushed farther than even he would have dreamed.

At first psychologists found that infant rats handled by humans grow up to be different from those not handled. And now the psychologists say that the childhood experiences of one generation of rats affect the behavior of the next generation.

To demonstrate this idea of maternal influence, Drs. Victor H. Denenberg and Arthur E. Whimbey of Purdue University, Lafayette, Ind., handled about 45 litters of baby rats and left about 45 litters alone.

When the rats grew up, they were mated and their children studied.

The offspring of handled mothers weighed more and defecated more than those of the rats that were left alone, the psychologists reported in *Science*, 142:1192, 1963. This difference between the infants held true no matter whether they were reared by their natural mothers or by foster mothers.

However, the experimenters found, the natural mother and the foster mother both affected the activity of the young rats. The most active rat-children were the ones born of non-handled mothers and raised by handled foster mothers.

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## NEUROLOGY

### Speech Defect Needs Nonverbal Treatment

► APHASIA, the speech impairment due to brain damage from strokes, accidents and various other illnesses, needs nonverbal research as a basis for treatment.

Prof. Ronald S. Tikofsky, who directs the aphasia division of the University of Michigan Speech Clinic, Ann Arbor, told the American Speech and Hearing Association's annual meeting in Chicago that research on aphasia should be broadened.

Aphasia researchers for many years, in looking for clues to the mystery of the speech problem that affects an estimated 1.5 million persons in the United States in varying degrees, have concentrated on the patient's verbal behavior.

Prof. Tikofsky reported one experiment in which the patients were asked to press a switch when a light flashes. He said when the interval between light flashes varied, practice made little or no change in the subject's reaction time. But when the interval was held constant, the response was quicker with practice.

The significance of this study, Prof. Tikofsky said, is that its findings have a great deal to do with such questions as how long one should wait for an aphasic to respond, and how fast stimuli can be presented effectively.

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## ENTOMOLOGY

### Bees Tend to Lose Pep On Hearing Sound Waves

► FIRE THE RIGHT SOUND wave into a hive of bees, and the bees will become so listless they will not bother to chase you.

Such is the implication of studies going on at the University of Wisconsin in Madison. Scientists hope sound waves also will supply more knowledge on the physical structure of bees, on how they "talk" to one another and on how to increase their productivity.

University entomologist F. E. Moeller and H. E. Showers, a high school biology teacher, made recordings of normal hive sounds. They found sound frequencies change when bees do different things.

The lowest frequency was in the part of the hive where bees were landing after trips to the field. Higher frequencies were recorded where bees were capping honey. The highest of all was recorded when bees were doused with smoke.

Further tests showed that sounds from 200 to 1,200 cycles per second, especially 960 cycles, calm down bees. When a 960-cycle sound period was beamed into the hive, activity was sharply reduced and the bees stopped flying around.

The researchers also found that bees sense sound through the vibrations of whatever they happen to be perched on, instead of through the air. They concluded that the bee's forelegs are either necessary to receive sound vibrations, or to transmit them to sensitive organs.

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