

## MEDICINE

**Depth of Trance Measured In Hypnotized Person**

➤ AN ELECTRICAL method for measuring the depth of trance in a hypnotized person is announced by Dr. Leonard J. Ravitz of Duke University School of Medicine in Durham, N.C.

The method is something like that of taking brain wave tracings, but brain waves do not show hypnotic trance depth. So electrodes are placed on the forehead and either hand of the person to be hypnotized, to measure voltage changes of the body.

During hypnosis, the tracing becomes more regular and electrical potential difference either gradually decreases or increases in magnitude. The voltage shifts dramatically at the end of the trance and the tracing becomes more normal.

The studies, made while Dr. Ravitz was at Yale University School of Medicine, are reported in the journal, *SCIENCE* (Sept. 22).

*Science News Letter, September 30, 1950*

## INVENTION

**Added Twinkles, Tinkles For Your Christmas Tree**

➤ YOUR tinsel-decked Christmas tree will tinkle and twinkle with Yuletide joy if equipped with the latest addition to the age of gadgets.

U. S. patent 2,522,906 was issued to Leo R. Smith of Alexandria, Va., for a small vibrator designed to be attached to the trunk of a decorated evergreen tree. Plugged into the house circuit, the motor imparts a two-way shimmy which is imperceptible in the tree itself, the inventor says. But the tinsel and shining balls will thereupon dance and sparkle, and the tree itself will produce an "intriguing rustling sound."

*Science News Letter, September 30, 1950*

## MEDICINE

**Brighter Way to See Patient's Stomach**

➤ DOCTORS will shortly be able to watch an image of what goes on inside a patient's stomach several hundred times brighter than the current fluoroscopic images. The new device, employing electronic methods and a fluorescent crystal, was developed by a University of Chicago physicist.

It will permit doctors to make routine or lengthy examinations for cancer and other diseases without fear of danger to the patient from too long exposure to X-rays and with a much clearer view of the patient's insides. Motion pictures of the image will also be possible with the new device.

Completion of the equipment, by Robert J. Moon, assistant professor of physics in

the university's Institute of Radiobiology and Biophysics, is reported in the university's *RESEARCH REPORTS*.

Mr. Moon points a television type electron gun at a target of tantalum foil. Some of the electrons, transformed into X-rays, are focused on the object to be X-rayed. After they pass through the object they hit a fluorescent crystal that changes the X-rays to ultraviolet rays. Their signal strength is multiplied many thousand fold and transmitted to a television-like viewing screen.

*Science News Letter, September 30, 1950*

## GENERAL SCIENCE

**M. I. T. Head Urges Total Draft if Total War**

➤ ALL men of draft age should be drafted, if the emergency becomes worse. This is the opinion of President James R. Killian, Jr., of Massachusetts Institute of Technology. Once they are drafted, Dr. Killian said, they could be assigned to civilian as well as military duties.

Speaking at a banquet of the American Society of Mechanical Engineers, the M.I.T. President urged, however, that regardless of a general war, "a certain number of young men" should be required to continue their education in essential fields.

"Under such a complete draft," said Dr. Killian, "the problem becomes, not one of deferment, but one of where a man can best serve the country."

The educator urged that, in the present emergency, the educational programs should not be disrupted prematurely. Pointing out that the nation may be faced with either an international explosion or a series of Korean-like emergencies, Dr. Killian warned that, "if we prematurely disrupted or seriously curtailed our higher education, we could in the end wind up with a disastrous shortage of trained manpower which would weaken us for either contingency."

"You can't fight a modern war or maintain a modern peace without highly trained manpower," he went on. "You can't do either without first-rate scientists or engineers."

*Science News Letter, September 30, 1950*

## AGRICULTURE

**U. S. Cotton Takes Beating from Insects**

➤ U. S. COTTON is taking the heaviest beating in many years from insects, the Agriculture Department reported.

Its monthly insect pest survey showed boll weevils, cotton leafworms, bollworms and pink bollworms were on a rampage. Texas and Oklahoma are at the center of the attack; in a regulated section of southern Texas, the pink bollworm has developed to serious proportions, the report said. In one county, losses in the field are running as high as 50%.

*Science News Letter, September 30, 1950*

**IN SCIENCE**

## DENTISTRY

**Caries in Offspring Result Of Disease in Pregnancy?**

➤ THE possibility that a baby may be born with a harelip or cleft palate or with unusual susceptibility to tooth decay as a result of his mother having an infectious disease during pregnancy will be investigated by Dr. Seymour J. Kreshover of the Medical College of Virginia at Richmond under a dental research grant of \$8,320 from the U. S. Public Health Service.

Gum inflammations and diseases, which are the chief cause of tooth loss in grown-ups, will be attacked in research aided by two other grants just announced. A method of measuring the prevalence of one major gum disease, gingivitis, and a study of the relation of alcoholism, diabetes and other chronic diseases to gum inflammation will be carried on by Dr. Isaac Schour of the University of Illinois under two grants totalling \$19,720.

The largest single grant, \$18,478, was awarded to Dr. J. R. Blayney of the University of Chicago to aid a 15-year study of water fluoridation as a means of fighting tooth decay.

The 28 dental research grants made on recommendation of the National Advisory Dental Research Council total \$187,076.

*Science News Letter, September 30, 1950*

## ENGINEERING

**Two Gallons Gas Equal To Three of 25 Years Ago**

➤ TWO gallons of today's antiknock gasoline are worth as much in power as three gallons of the gasoline of 25 years ago which cost about the same per gallon disregarding taxes.

This claim was made in Detroit and backed up by road tests conducted by the Ethyl Corporation, using various automobiles, including a 1921 touring car, two 1950 models with experimental engines with low and high compression ratios and a couple of standard production 1949 models.

The 1921 model using fuel of 1925 vintage made 14.95 miles per gallon, the modern car with 4.5 to 1 compression ratio gave 16.08 miles per gallon on the same 1925 antiknock fuel, while the modern car with 8 to 1 compression ratio engine on 1950 premium gasoline gave 25.7 miles per gallon.

A test with the two current models with standard 7.5 to 1 ratio showed that today's gasolines and engines provide improved acceleration and hill climbing ability.

*Science News Letter, September 30, 1950*

# E FIELDS

## CHEMISTRY

### Powdered Starch in Candy Factories Is Dangerous

► NEVER mind TNT factories. U.S. candy makers are in a pretty dangerous business themselves, explosion experts of the U.S. Bureau of Mines reported in Washington. They handle a ticklish raw material: powdered starch. When enough dust from the starch meets a source of ignition, said the Bureau's explosive researchers, there is apt to be a solid, resounding blast. "Explosion pressure relief vents should be provided in plants to reduce structural damage," the report says meaningfully.

Experiments in Pittsburgh laboratories of the Bureau of Mines are laying the groundwork for a safety code aimed at preventing dust explosions in the confectionery industry. One such severe starch-dust explosion occurred two years ago in a large candy factory. The safety code will be prepared under auspices of the National Fire Protective Association.

Science News Letter, September 30, 1950

## NAVIGATION

### Traffic Theories Can Keep Store Sale Crowds Moving

► THE PROBLEM of how to keep crowds moving to and from a bargain counter on a big sale day can be solved by using the same theories that apply to airport or railroad traffic control.

Proper navigation is a vital problem in war or peace, Dr. Paul Rosenberg, president of the Institute of Navigation, told the three-day joint meeting on Navigation and Electronics in New York.

"From pedestrian to canal barge, and from submarine to rocket," there are certain navigational problems common to all, Dr. Rosenberg stated. He urged that these common factors be integrated into a single, unified science. Heretofore, he said, scientists have been tied up with the intricacies of highly specialized fields, such as radar or loran.

"For example," Dr. Rosenberg stated, "a vacation tourist puzzling over an automobile road map in New England may present an amusing picture to a professional navigator, but the situation loses its humor when the selfsame type of navigational problem is encountered by a lost army patrol trying to find its way back to the U.N. lines in Korea."

Another example he cited was the importance of upper atmosphere and interplanetary navigation in the development today and tomorrow of long range rockets

and guided missiles.

Devices to guide blind persons now being tested use navigational methods and principles common to radar and sonar, Dr. Rosenberg stated.

Electronic navigation is "vital to all phases of military activity at sea, on land, and in the air," he concluded.

The meeting is sponsored by the Institute of Navigation, and two government-industry Radio Technical Commissions for the Marine Services and Aeronautics.

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## ENGINEERING

### Sawdust Houses Stand Against Big Bad Wolf

► AND the big bad wolf said, "I'll huff and I'll puff and I'll blow your house in." But the lazy little pig—not the industrious pig who had built his house of brick—laughed and said: "Ha, ha, ha, I've built my house of sawdust, and you can't blow my house in."

Well, the big bad wolf thought this was exceedingly silly so he huffed and he puffed—but, try as he would, he could not blow in the lazy little pig's sawdust house.

You see, kiddies, the lazy little pig had built his house of high quality synthetic lumber made of pressed sawdust and wood shavings bonded with synthetic resin. Robert A. Caughey, research director of Souhegan Mills, Wilton, N.H., told the American Society of Mechanical Engineers meeting in Worcester, Mass., that this kind of lumber could be made of woods now considered either decidedly inferior or completely unusable. And, he said, it would cost much less. He declared that these synthetic boards often would do a better job than the real stuff now in use.

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## INVENTION

### Salt Removed from Ocean Water

► A CHEMICAL sleight of hand trick for removing salt and minerals from sea water was awarded patent 2,522,856. The inventor, Arthur M. Buswell of Urbana, Ill., has assigned all rights to the government, as represented by the Secretary of the Navy.

The new process produces drinkable water from the ocean. Most likely users: castaways on lifeboats or life rafts.

When a fresh water cask becomes empty it may be filled from the sea. About three-quarters of a pound of powdered silver fluosilicate is added per gallon of saltwater to remove the salt. When the solids have settled, the water is poured off into another cask, and about half an ounce of ordinary lime is added. After this settles, taking with it magnesium and the fluosilicates, the water is ready for drinking.

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## ZOOLOGY-CHEMISTRY

### No More Sugar for This Little Worm

► WESTERN sugar beet growers, who regard a tiny worm as one of their biggest pests, now have a new soil fumigant which may help them take a sizable amount of growing sugar back from this parasite.

The fumigant is a mixture of chlorinated hydrocarbons forced into the ground through nozzles, where the liquid vaporizes and kills most of the roundworms, or nematodes, in the vicinity. Northern Utah farmers who tried it last summer more than tripled their beet yield per acre, compared to unfumigated land.

The roundworms, an official of the Beet Sugar Development Foundation in Fort Collins, Colo. said, sometimes completely strip a badly-infested field of its crop. They are seemingly immune to ordinary insecticides, including DDT.

The new treatment is not permanent. It lasts only one year. It is so toxic, moreover, that it must be used at least two weeks before planting, or the fumigant will kill the sugar beets as well as the worms.

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## AERONAUTICS

### Join the Air Force To Sleep in Hammock

► FROM the days of wooden frigates to the six-engined might of the B-36, military life has turned full circle. The Air Force now is putting hammocks into its biggest bombers.

At Wright-Patterson Field in Dayton, the Air Materiel Command showed off an adjustable sleeping hammock made of nylon netting. A pair of the swinging bunks are to be installed in the forward flight compartment of each B-36 for use by standby crew members during rest periods.

Not that the B-36 doesn't have regular bunks. The giant plane has permanent sleeping facilities in a compartment near the tail. But it is a long crawl, inching on hands and knees through a tunnel cat-walk, for pilots, radio operators and flight engineers to reach the bedrooms to the rear.

The new hammocks are designed for catnaps up front, between hitches of flying during non-stop flights which last several days. They are a far cry from hammocks used in the day of iron men and wooden ships. These have adjustable support straps which mold the flexible netting to the body beneath the head, neck and knees. Tested by both Air Force and Navy personnel, the new swinging beds got top comfort rating.

Apparently the Air Materiel Command expects airmen to be hefty—or else it is merely preparing for the heftiest. The new hammocks are strong enough to hold 600 pounds.

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