

## MEDICINE

**Dime-Sized Area in Brain Is Consciousness Center**

➤ A DIME-SIZED area in the very middle of the brain is the brain center for consciousness. Location of this area was announced by Drs. George N. Thompson and J. M. Nielsen of the University of Southern California, at the meeting of the American Medical Association in Chicago.

If this dime-sized piece of brain is destroyed, as by a blood clot, hemorrhage or tumor, the patient loses consciousness. He goes into a deep coma and while he may live on for several days or even three weeks, he does not recover.

Patients who sleep for prolonged periods, as in so-called sleeping sickness, or encephalitis, probably suffer damage to this seat of consciousness but not destruction of it, Dr. Thompson said.

Science News Letter, July 3, 1948

## MEDICINE

**Hormone, Vitamin Useful In Combatting Liver Ills**

➤ USE of synthetic male sex hormone for treatment of chronic liver disease was announced by an eight-man research team of the University of California medical school and the U. S. Naval Hospital, Oakland, Calif., at the meeting in Chicago of the American Medical Association.

The treatment is aimed at helping patients with damaged livers build up body proteins from the meat and other protein foods they eat. In cirrhosis and other forms of liver damage the body may fail to build protein. Giving one of the protein building-blocks, an amino acid called methionine, helps some patients. But others are not helped even by this. In such cases, the Navy-California scientists advise trying doses of male hormone.

Scientists reporting this research are Drs. L. W. Kinsell, G. D. Michaels, H. A. Harper, Sheldon Margen, W. E. Larsen, A. V. Holmes, D. B. McCallie and E. F. Evans.

A vitamin test for early detection of liver disease was reported by Drs. Shepard Shapiro and Murray Weiner of New York and Dr. Paul Unger of Miami Beach, Fla.

Liver disease is definitely increasing in this country, Dr. Shapiro said. Many contracted jaundice while in military service, and a notable increase in alcoholism has also played an important part

in the rising rate of cirrhosis of the liver.

In their test for liver disease, they inject vitamin K, sometimes called the anti-bleeding vitamin, through the veins to the liver. If the liver is healthy, it uses the vitamin normally and completely as shown by its production of the blood-clotting substance, prothrombin. The diseased liver, however, utilizes the vitamin only partially and with considerable delay.

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## BIOCHEMISTRY

**Ammonia Preferred by Nitrogen-Fixing Bacteria**

➤ AMMONIA is preferred to straight nitrogen from the air by the nitrogen-fixing bacteria that live in the root nodules of clover, beans and other leguminous plants. This has been discovered by Profs. Robert A. Burris and Perry W. Wilson of the University of Wisconsin, in experiments in which the rare stable isotope of nitrogen was used as a tracer element.

When offered both atmospheric nitrogen and nitrogen compounded into ammonia, the bacteria took the ammonia exclusively. When ammonia was introduced into the surrounding atmosphere the organisms switched to it within a minute.

Nitrogen taken in by the bacteria, whether from the air or in ammonia, became concentrated particularly in two of the amino acids, or protein building-blocks, known as glutamic and aspartic acids.

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## BIOCHEMISTRY

**New Growth-Promoting Chemical Announced**

➤ A NEW growth-promoting chemical, that greatly speeded up the production of leaves by rice plants in experiments, was announced by a research group at the University of California. It also prolonged the life of grapevine cuttings. The new compound has been named dithiobiuret.

It seems to resemble other growth-promoting chemicals in having ill effects on plants when applied in too high a concentration. A strong solution caused tumor-like growths at the base of cuttings.

Members of the group who conducted the experiment were Pierre Carlo, Jean Dufrenoy, V. L. Pickering, Robertson Pratt, and Peter P. T. Sah.

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## MEDICINE

**X-Rays Relieve Pain In Arthritis of Spine**

➤ PAIN and in some cases stiffness of the back in rheumatoid arthritis of the spine can be relieved for many sufferers by X-ray treatments. Whether the disease is arrested by the treatment is not yet known, though it has not gotten worse in a significant number treated from five to eight years ago.

Results of the treatment were reported by Dr. William D. Robinson of the University of Michigan at the meeting of the American Rheumatism Association in Chicago.

The reason the doctors are not sure whether the treatment has stopped the progress of the disease is that it may stop by itself without any treatment, and may in some cases remain quiet for long periods and then get worse. No specific cause for the condition is known.

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## MEDICINE

**Doctors Get Guide for Use in Atomic Attack**

➤ A PRESCRIPTION guide for doctors to follow in case of an atomic bomb attack in their community or a neighboring one was presented by the Department of National Defense to the thousands of general practitioners of the nation at the meeting in Chicago of the American Medical Association.

Treatment of proven value for atomic casualties, national defense authorities state, consists of:

1. Normal nursing care.
2. Adequate diet high in protein (meat) and calories, low in residue, or bulk, and with added vitamins.
3. Fluids injected into the veins.
4. Whole blood.
5. Penicillin, sulfa drugs and the like.
6. Sedatives to help the victims sleep.

Treatment that may be of value but has not been proved consists of vitamins C and B<sub>6</sub>, one of the adrenal gland hormones, and two chemicals which may help control bleeding. These two are rutin and the dye, toluidine blue.

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# CE FIELDS

## AERONAUTICS

## Propose Freedom of Entry For Private Planes

➤ SIMPLIFIED procedures for private planes to follow when crossing national boundaries received consideration at Geneva by the International Civil Aviation Organization of which the United States and 47 other countries are members. Entry without advance permits is proposed.

The procedure would apply to business as well as pleasure planes, provided that no remuneration is received for carrying either passengers or cargo. There is one important exception to the proposed freedom of entry without applying for permits in advance. This is when a flight is planned over inaccessible terrain or through regions without proper air navigation facilities. In such cases each state would be entitled to specify the route to be followed, or would require special permits.

It is proposed further, that if any state require a permit with respect to flights into its territory for traffic purposes, there should be no charge made for such permit. It is the desire of the recommending body that these proposals be included in appropriate international standards.

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## ENGINEERING

## Moisture Resistance Aids Proposed for Brick Walls

➤ BRICK-MASONRY building walls to withstand moisture penetration should have their tops covered, be constructed with high lime content mortars and be finished with concave mortar joints, the American Society for Testing Materials was told in Detroit by C. C. Connor, New Jersey Bell Telephone Company, Newark.

Bricks with moderately low water absorption properties should be used, and the mortar should have the property of retaining its water. The kind and type of the lime used in the mortar, the type and thickness of the walls, the back-up materials, the height of the buildings, and the molding process of the brick, he stated, exerted no significant

influence on moisture resistance.

The conclusions are based on a study of 91 brick-masonry buildings. The investigation was made because moisture penetration through walls above grade is one of the most serious problems in this type of construction. All buildings studied had been exposed to the weather for considerable periods.

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## MEDICINE

## Germ Warfare More to Be Feared than Atomic Bomb

➤ GERM WARFARE is more to be feared than atomic war, two experts on atomic energy declared at a special session of the American Medical Association in Chicago. They are Dr. Paul C. Aebersold of Oak Ridge, Tenn., and Dr. Joseph G. Hamilton of the University of California.

"I would be much more afraid of effective biological (germ) warfare than of atomic bombs, even with their combination of radiation and blast," Dr. Hamilton declared emphatically.

Atomic bombs, he and Dr. Aebersold stressed, are to be considered largely as high explosive and fire bombs. The radioactivity from them, even with underwater bursts, is secondary, the two agreed. And there is nothing mysterious about this radioactivity. It can be detected and measured. Monitors can tell where it is and what areas are therefore dangerous. With germ warfare, said Dr. Hamilton, who is also a physician, there are no equally good detection methods for spotting the hazards.

The scientists did not minimize the death and destruction atomic bombs can cause through blast and fire. But they said "it would take a lot of bombs" to require evacuation of New York, for example.

Seeking further to banish public fear of radioactivity from atomic bombs, the scientists said the dangers of sterility or of deformed offspring resulting have been exaggerated. By the time a man or woman absorbed the amount of radioactivity that could cause permanent sterility, the man or woman would be dead, or dying. The sterilizing amount absorbed from the environment is about the same as the lethal amount. Likewise the amount absorbed by the parents that might cause mutations in the way of deformed offspring would be enough to cause destruction of the infant before birth.

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## PSYCHOLOGY

## Theoretical Robot with Human Emotions Described

➤ AN EMOTIONAL robot which would register frustration and pleasure and would react to such human drives as heat, cold, and hunger was described to the meeting of the Western Psychological Association in San Francisco.

The robot so far exists only in theory as worked out by Dr. M. A. Wenger, psychologist of the University of California at Los Angeles. Dr. Wenger proposes rigging up an "autonomic nervous system," using two electric circuits. One circuit would be sensitive to heat, cold, circuit failure, and rust, indicating their presence by flashing a white light. The second circuit would be activated by the first one. It would indicate compensation mechanisms with a red light.

The two lights, red and white, appearing in the same reflector and blending into a pink color, would indicate "pleasure" or "well-being."

Other states in the robot might be indicated by the degree of redness or whiteness.

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## HORTICULTURE

## 2, 4-D May Be Used To Speed Flower Production

➤ 2, 4-D, BEST KNOWN as a weed-killer, may also be used, in much lower concentration, to speed up the production of flowers, experiments at Cornell University indicate. Using the chemical in one-thousandth the strength employed for weed-killing purposes, Dr. A. M. S. Pridham of the department of floriculture has stimulated early blooming in petunias, calendulas, marigolds and lupines. He has also tried it on one garden vegetable, red kidney bean.

This really represents a normal use for 2,4-D, since the entire class of chemicals to which it belongs were first known as stimulators of plant growth. Their killing effects are the result of deliberate overdosage applied to undesired plants.

Dr. Pridham states that much more experimental work needs to be done to learn how 2,4-D can be used on a practical scale as a growth regulator. He is on sabbatical leave at present, and plans to work in New Zealand on application of growth-regulating chemicals to crop production.

Science News Letter, July 3, 1948