MEDICINE

Cortisone Life Saving From Phosphorus Poison

➤ CORTISONE, ADRENAL gland hormone famous for its effects in arthritis, may prove life-saving in cases of poisoning by yellow phosphorus.

A 29-year-old woman who was in grave condition four days after swallowing yellow phosphorus in a rat poison improved dramatically and subsequently recovered after cortisone was given.

Her case is reported by Drs. J. R. D. Bayne, J. C. Beck, L. Lowenstein and J. S. L. Browne of McGill University and the Royal Victoria Hospital in the *Canadian Medical Association Journal* (Nov., 1952).

The patient had tried to commit suicide by swallowing the contents of a four-ounce tube of the rat poison in a glass of water. She got about 14 times the minimal lethal dose of yellow phosphorus.

Penicillin and blood transfusions were also given to this patient and may have been partly responsible for the patient's dramatic improvement, but until the cortisone was given her course was following that typical of acute phosphorus poisoning.

Reason for trying cortisone was that this hormone chemical had been found to enhance certain liver functions, including glycogen storage, which are impaired in the liver damage caused by phosphorus poisoning.

Science News Letter, January 3, 1953

PUBLIC SAFETY

Tire Chains Important For Winter Driving Safety

➤ REINFORCED TIRE chains are declared the best self-help available to the automobile driver on slippery winter roads by the National Safety Council in a free leaflet prepared by its committee on winter driving hazards.

Chains cut stopping distances on snow and ice about in half, and increase starting and hill-climbing traction by four to seven times, the pamphlet declares. In regard to the many special tires now made for winter driving, it says, tests show that, except under several specific and unusual surface conditions, such tires do not come close to the performance of reinforced tire chains.

As contrasted to regular wire-link chains, reinforced chains have tiny teeth or cleats projecting from the cross-chain links.

Behind the safety recommendations of the committee of the National Safety Council there are about a dozen years of experiments in driving and stopping on snow and ice. The tests are conducted each winter on roads and frozen lakes in Wisconsin.

While most of the tests have been made on passenger cars, trucks have also been used. Now that synthetic rubber is so widely used in tires for passenger cars, comparative studies of them with tires of natural rubber have been made.

All tires, except big truck sizes, are now made largely of synthetic rubber, the committee states. Synthetic tires wear better, perform normally on dry or wet pavements and have other advantages. But on snow and ice, they skid about 8% farther and have 14% to 35% poorer forward traction ability than pre-war natural rubber tires.

Six rules for safe driving under winter conditions are given in the pamphlet. They are: Get the Feel of the Road; Slow Down; Keep Windshield Clear; Use Tire Chains on Snow and Ice; Pump Brakes to Slow Down or Stop; and Follow Other Cars at a Safe Distance.

Science News Letter, January 3, 1953

MEDICINE

Isoniazid Better in Some Forms of TB

➤ FOR SOME kinds of tuberculosis the new synthetic drug, isoniazid, is probably better than streptomycin. In tuberculosis of the lungs it is, however, just about as effective as streptomycin.

This was shown from experience with the drugs in treatment of 500 patients at the Municipal Tuberculosis Sanitarium of Chicago, Dr. M. R. Lichtenstein of Chicago reported at the meeting of the American Association for the Advancement of Science in St. Louis.

The kinds of TB in which Dr. Lichtenstein thinks the new drug will be more effective than streptomycin are tuberculous meningitis, possibly tuberculous adenitis, and miliary tuberculosis, which gets its name not from the military but from millet seeds, because in this form the disease causes spots resembling millet seeds in various organs of the body.

Isoniazid, Dr. Lichtenstein said, will probably prolong the lives of patients with irreparable damage, shorten the period of treatment for most patients and bring additional patients to surgery.

Science News Letter, January 3, 1953

AERONAUTICS

Jetliners Will Explore Stratosphere of World

➤ HIGH-FLYING British jetliners soon will be used to explore the stratosphere for round-the-world routes that can be traveled in two days.

The British Overseas Airways Corp. said the stratospheric exploration probably will begin next March, when the new Series II Comet jetliners get new and more powerful engines. Comets already are being used to whisk passengers from London to Johannesburg, South Africa.

A transatlantic stratospheric route from London to New York or Rio de Janeiro is scheduled for operation by 1954. Round-the-world routes will be established later, probably via Edmonton, Tokyo, Calcutta or Hongkong and Beirut.

Science News Letter, January 3, 1953

IN SCIEN

BIOCHEMISTRY

New Anti-Rickets Chemical Discovered

➤ DISCOVERY OF a new anti-rickets chemical was announced by Profs. Lester Yoder and B. H. Thomas of Iowa State College at an American Chemical Society meeting in Little Rock, Ark.

The new chemical, which is similar to vitamin D, is a brucine salt derivative of sulfonated cholesterol. It is known as 607 for short.

Compound 607 probably will not replace vitamin D in treatment or prevention of rickets, but is expected to prove useful in study of how the D vitamins act to mobilize and translocate bone-forming substance.

Vitamin D is known to exist in 10 forms. Of these, only D-2 and D-3 have practical importance. D-2 is made by ultraviolet irradiation of ergosterol. D-3 is made by ultraviolet treatment of a cholesterol derivative, 7-dehydrocholesterol, which can be isolated from fish liver oils. The vitamin is also formed in the skin of humans and other animals upon exposure to sunlight.

Science News Letter, January 3, 1953

TECHNOLOGY

Develop New System For Sizing GI Shoes

➤ A NEW system for sizing GI shoes has been developed by the Army to cut "foot casualties" and to give the serviceman a better-fitting pair of shoes.

A product of C. W. Mann of the Office of the Quartermaster General and his assistant, W. B. Zacharias, the sizing system may be incorporated in GI footwear within the next year. Manufacturers of shoes for civilians are expected to adopt the system eventually.

Mr. Mann said that the new sizing system takes into account the variations in foot shapes in large and small men. The variations, not matched at present in shoe design, often result in ill-fitting shoes which make the soldier more susceptible to frostbite, blisters and other ailments of the feet.

Although all details have not been worked out completely, shoes under the new system would come in about eight sizes instead of the present 15. The sizes would be spaced to better advantage, Mr. Mann reported.

Foot measurements taken from thousands of servicemen revealed that present-day standards of shoe design needed revision. The present shoe-sizing standards, not based on actual measurements, were developed shortly after the Civil War and have not been materially changed since then.

Science News Letter, January 3, 1953

CE FIELDS

MEDICINE

Alcohol Drugs Tested As Epilepsy Treatment

➤ DRUGS OF a new kind for epilepsy are being tested by Drs. Ralph W. Schaffarzick and Beverly J. Brown of Stanford University School of Medicine, San Francisco.

The drugs are alcohols. Currently, tests to show whether they will be safe when taken over a long period are being run with rats for the more promising of these alcohols. Among these are 2-methyl-2 propanol, 2-methyl-2,4-pentanediol, 3-pentanol and 2-methyl-2-butanol.

They are being tested following disappointment over another alcohol which at first looked very promising as an anti-epilepsy drug. This was methylparafynol, or Dormison, first introduced a year ago as a safe new kind of sleeping medicine. Rat tests showed it had ability to ward off electrically induced convulsions.

It was tried in patients with epilepsy and was effective. But after taking it six weeks, two of the first six patients showed signs of liver damage. One week after the drug was stopped, tests showed no more signs of liver damage. The treatment was abandoned, however, except in one patient, a 13-year-old girl. Her doctor continued to give her the medicine because it was the only thing that could prevent her grand mal seizures. The test showing signs of liver damage, although positive at first, later turned negative.

Some of the tests with Dormison and other alcohols are reported in *Science* (Dec. 12, 1952).

Science News Letter, January 3, 1953

PSYCHIATRY

Psychiatrists Say Sexy Books Don't Cause Crimes

➤ PORNOGRAPHIC LITERATURE does not lead to sex crimes, does not create juvenile delinquents.

This is the opinion of most leading psychiatrists and psychoanalysts, as expressed to SCIENCE SERVICE. Witnesses before the special House committee on pornography have testified that they believe this sort of literature fosters both sex crimes and juvenile delinquency.

However, most psychiatrists certainly would not endorse a licentious type of literature. They subscribe to much the same limits of decency and good taste as do other people.

People who read and enjoy pornographic literature usually do so, psychiatrists say, because they cannot achieve directly a normal kind of healthy sexual satisfaction. The pictures become a substitute sexual object. These people include sexual perverts and people who might commit sex crimes. The pornographic literature, however, does not create these people—in a sense, the people create the market for the literature.

The psychiatrists doubt if there is any scientific connection between the opportunity to read pornographic literature and the creation of a sex pervert.

As to juvenile delinquents, psychiatrists believe that most children pass through a stage of curiosity about sex that is evidenced in delight at forbidden words and interest in forbidden pictures. Most of them pass right through that stage, however. Those who stick to pornographic literature, do so because, for other reasons, they are not growing up. Once again it is not the literature which creates the juvenile delinquents, but the delinquents who create the demand for the literature.

In both cases, much more basic, more complex and more serious causes are to blame, psychiatrists say.

Science News Letter, January 3, 1953

RADIO

Shortwave Reception Bad One-third of Year

➤ IF YOU have felt that shortwave radio broadcasts did not come through as clearly as they should during the past year, do not blame your radio. Reception has been below average about a third of the time.

Predictions as to whether shortwave radio broadcasts crossing the North Atlantic Ocean would come through clearly or not during the past year have been correct 72% of the time, radio forecasters at the National Bureau of Standards have reported.

Storms in the ionosphere, which cause weak signals, fading and occasional blackouts to disrupt reception, were satisfactorily forecast over seven times out of every ten. This means that when radio storms were predicted for a certain date, they arrived on that date over two-thirds of the time. Forecasting storms correctly is of great importance in warning when urgent messages must be rushed through.

Submitting their predictions to a more exacting test, the forecasters were pleased to note that when they dared to place a value from one to nine on reception for a whole week in advance, then checked it with actual reception as reported by ten receiving stations, these advance estimates were perfect 30% of the time.

These twice-a-week forecasts, which cover reception for a week in advance, have been made for the past decade by the National Bureau of Standards from its headquarters in Washington. They are based on information gathered all over the world and tailored for reception of broadcasts from London, Moscow and Berlin.

During the past year up-to-the-minute forecasts designed to cover signals reaching Alaska from the Orient or western United States have been issued for Anchorage.

Science News Letter, January 3, 1953

PLANT NUTRITION

Broken Glass to Help Garden Grow in Spring

➤ BROKEN GLASS may be what you need to make your garden grow this spring, Dr. Norman Childers of the New Jersey State Agricultural Experiment Station has reported.

A recently developed material called "frit," essentially finely broken glass containing small amounts of minerals necessary for healthy growth, will soon be on the market, Dr. Childers said. Frit is used to insure a proper amount of trace elements, such as manganese, iron, zinc, boron and molybdenum, in mineral-deficient soils.

Dr. Childers said a single application of frit means none of these trace elements need to be added to most soils again for at least five, and perhaps ten, years.

The secret of frit, Dr. Childers said, is that it permits the slow, constant addition of trace elements to the soil, so there is always enough present for good growth, but not enough to "burn" the plants.

Frit can either be applied separately to the soil, about 50 to 200 pounds to the acre, or can be mixed with fertilizers. Dr. Childers said that although its first large users will probably be home gardeners, frit probably will soon become widely used in large-scale agriculture.

A commercial form of frit, FTE ("fritted trace elements"), has been produced by the Ferro Corporation of Cleveland, sponsor of much of the five-year research program on the mineral-containing glass.

Science News Letter, January 3, 1953

PUBLIC SAFETY

Mine Disasters Reduced By Practicing Safety

➤ NINE OUT of 10 disasters in coal mines, metal and non-metal mines, and quarries can be prevented if mine owners, supervisors and workmen cooperate earnestly to observe safety rules.

James Westfield, chief of the U. S. Bureau of Mines' health and safety division, told the American Association for the Advancement of Science meeting in St. Louis that most of the coal-mine disasters, which claimed the lives of 896 Americans in the last decade, could be laid to human failure to take recommended safety precautions.

Minimum precautions, he said, include adequate mine ventilation with regular tests of the air quality, the use of rock dust to reduce explosion hazards, spraying to prevent spread of dangerous dusts, the use of explosion-proof equipment in gassy mines, safe electrical installations, careful handling of explosives and the use of roof bolts and systematic timbering.

In contrast to the total death toll of 11,276 lives taken in the last 50 years by mine disasters, recent statistics show that established safety measures pay off with lives when carried out.

Science News Letter, January 3, 1953