

SURGERY

Radioactive Nylon Thread Used Against Cancer

► RADIOACTIVE NYLON thread that the surgeon can stitch into place is the latest aid for cancer treatment reported by the Atomic Energy Commission. It was devised by Dr. William J. Myers of Ohio State University Medical Center.

The thread is made by stretching warm nylon tubing to a small diameter and then inserting radioactive cobalt wire. The thread with its radioactive core is strong but fine enough to fit the eye of the surgeon's usual needles.

It is less irritating to the patient because of its flexibility. It can be placed in any location that can be reached by a needle, either from the surface of the body or during a surgical operation. At the end of treatment the threads are removed like stitches after an operation.

Science News Letter, February 10, 1951

OCEANOGRAPHY

California Coast Has New Underwater Valley

► A NEW VALLEY, deep under the Pacific Ocean, has appeared off California's coast.

Discovered during a survey with portable echo-sounding equipment, the new valley may have been caused by a light earthquake felt in La Jolla since the last previous survey.

Its existence is reported by Dr. Francis P. Shepard, of Scripps Institution of Oceanography. Research on the everchanging filling and deepening of submarine canyons and valleys is being done for the Navy's Office of Naval Research and the Army's Beach Erosion Board.

Science News Letter, February 10, 1951

ENGINEERING

Slow Driving and Chains Best on Ice and Snow

► SLOW, CAREFUL driving and tire chains are important essentials for safety on ice and snow, according to the National Safety Council, which confirms in recent studies the findings made in earlier practical experiments.

Tests of driving on glare ice and on snow were made under the sponsorship of the council's Committee on Winter Driving Hazards under various conditions and with various equipment. Most of them were made at Clintonville, Wis.

So-called winterized tires and mud-snow tires may or may not stop a car somewhat shorter on glare ice than conventional tires made of natural rubber, the committee states. Tire chains stop much shorter, the tests show.

Average braking distances on a car traveling at 20 miles an hour on glare ice are 209 feet for conventional natural rubber tires and 77 feet if equipped with chains, it is found. Braking distances for winterized and mud-snow tires range from 188 feet to 201 feet.

Pulling power on loosely packed snow for conventional tires averages 391 pounds. With reinforced tire chains on conventional tires it is 1,570 pounds. The specialized tires range from 394 to 563 pounds.

Careful driving remains the first essential in winter driving safety. The use of tire chains on ice and snow cuts braking distances on cars and trucks 40% to 70% and provides needed "go" traction. Other recommendations of the committee include keeping windshields clear of ice, snow, frost and fog to assure good vision, adjusting speed to road and weather conditions, and following other cars at a safe distance. Drivers should remember that, without chains, it takes from three to 12 times as far to stop on snow and ice as on dry concrete.

Science News Letter, February 10, 1951

INVENTION

Raw Egg Coating Holds in Coffee Flavor

► COFFEE flavor and aroma is preserved without vacuum packaging by a process of treating roasted coffee in which the beans are coated with a paste of raw eggs at a temperature of about 150 degrees Fahrenheit. The paste not only holds in flavor and aroma but also improves the taste of the coffee. Patent 2,539,626 was awarded to Helen Louise Kellogg, executrix of John L. Kellogg, deceased, of Chicago.

Science News Letter, February 10, 1951

CHEMISTRY

Revolutionary Paints Predicted for Future

► RADICALLY new paints, lacquers and enamels are predicted for the next decade by Henry F. Payne, technical editor of the American Cyanamid Co. and secretary of the American Chemical Society's paint, varnish and plastics division.

Liquid synthetics of low molecular weight will be converted into solid film by an entirely new process which is not yet discovered, he foresees. Chemical synthesis has already produced coatings which will dry faster than natural oils and resins and have greater toughness, resistance and durability.

Automobiles now get finishes of alkyd and melamine resins applied in two or three coats in two or three hours. These are more durable than coatings of earlier automobiles that needed six to eight coats, taking ten days' time.

Science News Letter, February 10, 1951

IN SCIENCE

MEDICINE

New Chemical Eases Pains of Childbirth

► SUCCESS with a new chemical aid for easing the pains of childbirth is announced by Dr. Frank E. Baum of Maumee Valley Hospital, Toledo.

The chemical is hyaluronidase. It is used in a solution with the local anesthetic, procaine, and epinephrine, more familiarly known as adrenalin. Hyaluronidase is not itself an anesthetic or pain-killer, but has ability to increase the spread and absorption of other chemicals in solutions when injected under the skin.

Only one out of 50 patients failed to get complete relief of pain and relaxation of the perineum. In many cases the mother was not aware her child had been born until she heard it cry, Dr. Baum states in his report. (AMERICAN JOURNAL OF OBSTETRICS AND GYNECOLOGY, Dec.)

The chemical was put into the pain-killing solution used for pudendal block anesthesia, a method of blocking pain by injecting the pain-killing chemical into a nerve. Hyaluronidase spread the anesthetic mixture rapidly and made it unnecessary to deposit the anesthetic directly at the site of the nerve. Adjacent tissues not supplied by the nerve were also anesthetized.

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PHYSICS

Physical Constants Refigured for Science

► AID IN CRACKING the mystery of the atom will come from the new values for 60 basic physical constants which have been compiled by Dr. J. A. Bearden and H. M. Watts of Johns Hopkins University.

The figures are used by scientists in computing and judging results of their atom-exploring studies. Dr. Bearden and Mr. Watts calculated the new values mathematically, giving weight both to figures from recent, more accurate studies and to those from classical experiments.

Their calculations set the speed of light at 299,790.0 kilometers per second, with an estimated error, either more or less, of seven-tenths of a kilometer per second. This is about seven-tenths of a kilometer per second faster than the most recently announced figure. (See SNL, Nov. 18, 1950). Other basic constants they have revalued include the mass and charge of the electron, basic unit of electricity. The changes made in the generally accepted values are extremely small.

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E FIELDS

METEOROLOGY

Radioactive Gas Shows Water-Cloud Pick-Up

► WATER from the oceans and lakes of the earth is carried up into the clouds much faster—and more of it is carried higher—than weather experts previously believed.

These are the conclusions to be drawn from a study carried on by Dr. Lester Machta of the U. S. Weather Bureau and reported to the joint session of the American Meteorological Society and the Institute of the Aeronautical Sciences in New York.

Little is known about the movement of air upward from the earth's surface, "vertical eddies" as the meteorologists call them. Dr. Machta hit upon a new method of measuring these vertical eddies. Radon gas, from decaying radium, is known to be given off from every point on the earth's surface, although in only minute amounts.

Dr. Machta measured the amounts of this gas, in its various decaying forms, to be found at various levels of altitude.

Radon gas, being radioactive, decays at a known rate. Working from this fact he was able to tell how much of the gas given off by the earth arrived at various altitudes and how fast it arrived. Since this gas was carried up by the vertical eddies, he could measure their speed and their carrying power.

Much more is known about horizontal eddies, Dr. Machta said. If there were greater knowledge of vertical eddies, we would know more about how the atmosphere draws up water from the earth, how clouds are formed and how it rains.

Dr. Machta took samples from the air in four flights, two off the California coast and two over Ohio. There is a difference, he said, in the amount of radon given off by water and the amount given off from the land.

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GENETICS

Try To Produce Disease-Resistant Tobacco

► WHETHER tobacco farmers can defeat the destructive blue mold by planting specially bred, disease-resistant crops is being tested in seed beds for the first time this year. Blue mold seriously menaces the multi-million dollar tobacco industry.

The year's first case of blue mold attacking greenhouse tobacco has been reported. Dr. E. E. Clayton, Agriculture Department official in charge of tobacco disease research

at the Plant Industry Station, Beltsville, Md., predicts that the first case of this airborne mold attacking field plants will come about the middle of February, probably somewhere in Georgia.

The damage caused by blue mold depends on weather conditions when the attack is at peak, usually around the second week in March. Cool, cloudy conditions favor a very destructive outbreak, while bright, warm weather cuts down the damage from the mold.

Although the di-thio-carbamate fungicides, fermate and diphane, are effective against blue mold, many tobacco farmers have not yet adopted this form of protection for their plants.

Science News Letter, February 10, 1951

INVENTION

Rolling Perch Gives Exercise to Fowl

► THE CHICKEN in the tiny coop need no longer suffer from lack of exercise. A rolling perch, invented by Bernhard J. Gass of Washington, D. C., provides the exercise to develop the muscles of the fowl and help keep the bird in good physical condition.

The device brought the inventor a patent from the government recently. Patent 2,539,348 was issued to him on what is officially an exercise perch for fowl.

It consists of a round rod, of any length desired, which extends between two uprights with interior slots in which the ends of the perch roll. Perch and supports can be made in different sizes to accommodate different size birds. The "unbalance" of the fowl trying to roost on the perch causes it to roll. Leg muscles get the most exercise but the entire body gets some.

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CHEMISTRY

New Detergent Removes Surgical Tape

► IMPROVED SOLVENT, for removing surgical tape, actor's wigs and false mustaches, and even paint, varnish and chewing gum, from the body, brought Steven Clensos, Los Angeles, patent 2,539,531. The preparation is odorless and, unlike some other solvents used for the purpose, is harmless to the skin.

This detergent, as it is called, consists of a mixture of light liquid petroleum jelly and hydrocarbon fractions from all but the lower and upper kerosene range. Perfuming and coloring ingredients may be used. It includes enough of a non-volatile hydrocarbon to return to the skin as great a percentage of oils as removed by the more volatile constituents of the solvent.

Science News Letter, February 10, 1951

PHYSICS

Reflected Sound Waves Assist the Blind

► A SIMPLE system to aid the blind, developed in London, utilizes sound waves to warn the user of obstacles ahead. It is a development made by engineers at St. Dunstons' Society.

It consists of an instrument, similar in size and appearance to a large electric torch, which is carried by the blind person. It contains equipment and batteries to send out a thin beam of sound waves which is reflected back to the ears if an object is encountered by it.

It follows the principle of wartime radar, but uses sound waves, not radio signals. The sound is sent out in the form of clicks and received as clicks. The blind person hears almost no sound from the instrument, but listens for reflected noise from objects in the way.

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NUTRITION

Children Fail To Get Enough Energy Food

► START EARLY to train the child in good food habits, advises Dr. Pauline Beery Mack, director of the Ellen H. Richards Institute at Pennsylvania State College. Food habits tend to get worse, not better, as the child gets older. If he has not gotten a good start, it is harder to rehabilitate him, nutritionally, because he has to make up for lost time. Poor nutrition is cumulative, with poor physical status in middle and later life resulting.

Dr. Mack's advice is based on records of 2,564 children included in the Pennsylvania mass studies in human nutrition since Jan. 1, 1944. She found that less than 40% were meeting the current energy recommendations for their respective sexes and ages at the time of the test, with about one-fourth falling below 75% of caloric recommendations. From three-fourths to four-fifths of them were reaching the recommendations for phosphorus and vitamin A. Approximately 60% were consuming the amount of protein, calcium, riboflavin, niacin, and vitamin C recommended, with approximately one-half conforming only to the recommendations for iron and thiamine.

Dr. Mack also reports that children under four appear to have the best food habits while those from four to six are slightly poorer. The habits begin to slide as the children grow older with girls from 13 to 15 years of age coming farther from meeting the recommendations, particularly of energy, than any of the other sex-age groups. Young women from 16 to 18 are only slightly better. While boys at these ages also leave much to be desired, they surpass the girls of the same age in adherence to diet recommendations.

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