

TECHNOLOGY

English School Teaches Use of Radioactive Materials

► THE HANDLING and use of radioactive materials in medicine and the industries is the subject of instruction of an atomic energy school just established at Harwell, England. This site was selected because it is adjacent to the government's Atomic Energy Research Establishment from which radioactive isotopes can be obtained and because of the nearness of research scientists of the Establishment who can give instruction.

This school, in six-week courses, is designed to meet the requirements of medical and industrial workers who need to learn what can be done with radio-isotopes, and what apparatus and methods are necessary to deal with radioactive materials. Proper handling methods are also included.

Along with the courses in handling and using radioactive materials is a course giving a broad outline of the principles of nuclear physics, the principles of the electronic circuits used in measurements, and the hazards and biological effects of radioactive materials.

Science News Letter, May 19, 1951

TECHNOLOGY

Suits Come Through Rain Without Losing Crease

► SUITS THAT come through a rain without losing their crease and slacks that can be home-laundered and yet hold their press are promised for the future by textile advances.

Dr. Louis L. Larson of Du Pont told the American Association of Textile Technologists meeting in New York that the new polyester fiber, christened Dacron (formerly Fiber V), is most likely to be used in suits. Men's outer wear may be revolutionized in the same way that nylon has invaded stockings and men's shirts.

Large scale production of the new fiber is scheduled for 1953. Twenty men have worn experimental Dacron suits in a test, reporting that they were unworried by wrinkles in damp or rainy weather.

Science News Letter, May 19, 1951

MEDICINE

Iodine-Less Thyroid Hormone Is Tested

► A NEW view of the importance of iodine in the action of the thyroid gland hormone was suggested by studies reported by Drs. Fritz Lipmann and Charles H. DuToit of Massachusetts General Hospital, Boston, at the meeting of the National Academy of Sciences in Washington D. C.

The specific action of the hormone on metabolism and various body functions may depend on another property of the hor-

mone molecule rather than on its iodine content, these scientists reported.

The gland's need for iodine to make its hormone has been the reason iodine is added to drinking water or table salt in regions where it is lacking in the water supply.

Drs. Lipmann and DuToit tested a compound similar to thyroxin, the thyroid hormone, except that where the gland product has iodine in its molecule, this other compound has nitrogen-containing groups. This compound, called tetranitro thyronine, was made by the Glaxo Laboratories, Ltd., in England.

It was tested on rats that had their thyroid glands removed. The animals stopped growing, had a low metabolic rate and such other signs of thyroid lack as scalliness of the tail, caked eyes and a rough fur.

When they were given tetranitro thyronine, their metabolic rate rose to normal levels, they started growing again and other signs of thyroid lack receded. One rat even showed a temporary state of pop-eyes like that seen in humans with the kind of goiter due to too much thyroid hormone from overactive thyroid glands.

"Activity of the nitro compound," the scientists stated, "suggests that the specific action of the hormone may depend on a strong negativity of the substituents on the phenolic ring system, rather than on their specific halogen nature."

Science News Letter, May 19, 1951

GENERAL SCIENCE

Petroleum Production in Mexico Will Aid America

► DISCOVERY of a rich new oil field in southeastern Mexico, revealed by Senator Antonio J. Bermudez of Mexico City, head of the Mexican government petroleum administration, gives Mexico a forward boost, important to America, in a 50-year-old oil industry in which it already is playing an important part.

A test well in the new field yielded 146 barrels of high quality crude oil in two hours, he said. This means a daily initial capacity of 1,750 barrels. It is important news for the United States because it means more oil available for export if a worldwide emergency interferes with importation to America from the Arabian area or from Venezuela.

Important also to the United States is the fact that Mexican oil production from old fields and other newly discovered fields has greatly increased during the past five years. The aim of the Mexican president is to reach maximum development of the Mexican petroleum industry as soon as possible, according to a recent report by the senator, the objective being national defense. Crude oil production in 1950 was up to 73,800,000 barrels, as against some 62,097,000 in 1949, he stated.

Science News Letter, May 19, 1951

IN SCIEN

GENERAL SCIENCE

Magnesium Alloys Safe For Electric Appliance Use

► MAGNESIUM ALLOYS are safe materials to use in the housing of portable electric appliances under ordinary conditions, according to a report just issued by Underwriters' Laboratories, Inc., of the National Board of Fire Underwriters in New York.

Danger from fire by their use is very small if the alloy is at least .08-inch in thickness, 125-volt current of 30 amperes or less is used, and the appliance circuits are limited to 60-cycle alternating current operation. Ordinary household appliances are within these limits.

The study was made by the organization at the request of the Magnesium Association and because of the idea on the part of some that magnesium is highly combustible. Magnesium and its alloys are not of a fast-burning nature, except in the form of powder, turnings, shavings or thin sheets, the report states. When thin sections of magnesium or its alloys are ignited, the burning is not readily extinguished because of high chemical affinity for oxygen at elevated temperatures.

Further investigations are to be made concerning any possible fire hazards from magnesium or its alloys in other applications. For portable appliances, under the conditions stated, enclosures of magnesium-base alloys are judged to have sufficient resistance to self-sustained ignition to justify their use.

Science News Letter, May 19, 1951

INVENTION

Patent Automatic Airplane Altitude Control System

► AIRPLANES IN flight will automatically maintain a desired altitude by means of an altitude control system which brought Alan M. MacCallum, Maywood, and Norman B. Murphy, West Englewood, N. J., patent 2,552,196. Bendix Aviation Corporation, Teterboro, N. J., has acquired the patent rights.

Automatic steering systems now in use on many planes maintain level flight in the air under ordinary conditions except when encountering rising or descending air currents. This novel electric altitude control unit, a device supplementary to an automatic steering system, will keep the craft at the desired altitude after it has been attained notwithstanding rising or descending air currents, or changes in the loading of the plane.

Science News Letter, May 19, 1951

CE FIELDS

PSYCHIATRY

Grief in Old Folks Causes Physical Ills

► OLD PEOPLE are likely to show their grief for a lost loved one not in tears but in physical sickness, psychiatrists at an oldsters' guidance clinic find.

The illness may be the way the old people "work out" feelings of guilt toward the deceased, since they have such feelings very rarely compared to younger persons.

The oldster will also idealize the deceased person to an almost fantastic degree. While there is a tendency for people at all ages to remember a loved person who has died as much more wonderful than the deceased was considered in life, this idealization in bereaved older persons may reach quite abnormal proportions.

These findings were reported to the American Psychiatric Association meeting in Cincinnati by Drs. Karl Stern and Miguel Prados and Miss Gwendolyn M. Williams of Montreal, Canada. Their studies were made at the Old Age Counselling Service, oldsters' equivalent to a child guidance clinic, which McGill University has run for the past six years.

Science News Letter, May 19, 1951

TECHNOLOGY

Vapor From Crystals Inside Paper Protects Metals

► LONG-TIME PROTECTION for metal objects from rust and other corrosion is promised with a simple packaging method that uses a vapor from new chemical crystals placed on the inside of wrapping paper to prevent the destructive reactions.

The chemical is a product of the Shell Oil Company, New York, and is technically called "volatile corrosion inhibitor." Its chemical composition is not yet revealed. It is a powdery substance that releases a thin vapor which, inside the wrapper, forms an invisible protective shield around the metal.

In use, paper wrapping, coated with the chemical crystals, is put around the object to be protected and sealed. The vapor begins to form and completely surrounds the metal, penetrating to the smallest parts with its protective film to insure complete protection. The vapor gets into the most inaccessible parts.

This volatile corrosion inhibitor may some day be used by the military services to protect war equipment from rust and corrosion when not in use. Tests are now being made by the Army Ordnance Research and Development Division.

If found successful after sufficient experimental trials, it would do away with the present method of coating such equipment as guns with heavy grease, which gives little protection to inaccessible parts and is always hard to clean off when the equipment is needed for use again.

The experiments now being conducted by Army Ordnance with the volatile corrosion inhibitor may improve the old protective "cocoon" used to protect planes, guns and vessels from severe weather conditions. Researchers have developed a "shroud or "cloak" treated with the chemical which may be placed over aircraft engines and objects of similar size in one operation. To date, tests have produced satisfactory results.

Science News Letter, May 19, 1951

MEDICINE

Shield Some Organs to Aid Chance of Surviving A-Bomb

► CHANCES OF surviving the radiation from an atomic bomb are increased if some of the body's organs are shielded enough to keep their efficiency.

Experiments with the 184-inch cyclotron at the University of Chicago show this. The high energy beam of the cyclotron allows radiation of part of the body of a mouse while the rest of the body is not affected. Under the direction of Dr. John H. Lawrence, the beam is being used to irradiate the belly of a mouse, or its lungs or some of the glands, each organ being exposed to the beam while the rest of the body is protected.

The results, reported at the meeting of the Federation of American Societies for Experimental Biology, show that the reason for greater sensitivity when the whole body is irradiated is that all the organs are affected simultaneously.

Science News Letter, May 19, 1951

INVENTION

Alarm Clock Rings When Fire Danger Threatens

► SAFETY FROM fire for sleeping persons is provided with an electric clock which rings an alarm if the temperature of the bedroom reaches an unsafe degree. The "fire-alarm" part of the device does not interfere in any way with its normal operation as a timepiece. It utilizes, however, the same sound producer employed when the device acts as a simple alarm clock.

Operation as a fire-alarm depends upon the use of a material which changes from a solid to a fluid at a predetermined temperature above normal room temperature. Various wax compositions and metal alloys are suitable for the purpose. The temperature at which the fire alarm goes off depends upon the material used. Patent 2,552,331 was issued to Anthony H. Lamb, Hillside, N. J., for this invention.

Science News Letter, May 19, 1951

TECHNOLOGY

Artificial Sand Grains Make Lubricating Grease Smoother

► MICROSCOPIC BALL-BEARINGS to make your car run more smoothly were announced at the dedication of Du Pont's new research laboratory at Wilmington, Del.

Round particles which make lubricating grease smoother and slipperier have been made out of silica, which usually comes as sharp edged grains of sand. Du Pont chemists blend these tiny spheres with lubricants which ordinarily grow thin when machinery gets hot. Grease so treated stays put and does not leak out of the machine as temperature goes up.

The round, fine-grained form of silica was found by chemists trying to see how many kinds of things they could make out of sand. Although always underfoot, this material still holds surprises. The idea of putting it into lubricants came after it had been made and its smooth, slippery nature recognized.

Science News Letter, May 19, 1951

TECHNOLOGY

Oil Industry Developing Waste Disposal Methods

► OIL REFINERIES are right on the job of taking care of waste waters from their operations which would otherwise pollute the streams into which they dump. How the problem is being met was a principal subject of discussion at the meeting of the American Petroleum Institute in Tulsa, Okla. Successful methods were described.

Credit for the activities of the oil refineries in preventing water pollution does not belong entirely to them. Public authorities such as anti-pollution boards, fish and game commissions, harbor boards and others, have established stringent requirements regarding oil content, suspended solids and other factors of pollution. However, the oil industry is cooperating in good spirit.

Disposal of industrial waste waters is constantly presenting more difficult problems, the Institute was told by Nicholas A. D'Arcy, Jr., Huntington Park, Calif. Properly designed and operated dissolved-air flotation clarification has been effective in removing free oil from waste water, he said. When colloid-forming chemicals are added, the combination has efficiently cleaned up industrial waste waters at many types of manufacturing plants.

The subject of gravity separation is of special importance in the petroleum industry, the meeting was told by Alfred C. Ingersoll of the California Institute of Technology. One of the undertakings of the American Petroleum Institute, he said, has been to keep abreast of developments in oil-water separation.

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