

AERONAUTICS

Coastal Airport Is in Relatively Fog-Free Area

➤ FREEDOM from fog is forecast for Baltimore's new Friendship International Airport which will be dedicated and opened late in June this year. Located on a man-built plateau 140 feet above sea level, it is in an area where dense fogs occur during only five days in a year.

In spite of this, instrument landing equipment of the latest type is being installed. The instrument landing runway is unusual in length and width, which in itself is a safety factor. The runway is 9,450 feet long and 200 feet wide throughout.

Another safety factor is a zoning law which applies to the 32-square-mile area surrounding the airport. No building, power line or other structure taller than 280 feet above sea level may be erected within four miles of the runways.

The effect of this zoning is to provide a minimum of a so-called "fifty-to-one" approach, said to be the safest ever provided anywhere. This means a pilot may glide forward 50 feet for each one foot of descent. "Twenty-to-one" is regarded as satisfactory in other major seaboard landing fields.

This new airport is Baltimore's bid for international planes as well as for domestic traffic. It is located about half way between this city and Annapolis, and within an easy hour of automobile travel from Washington, D. C. It is expected to serve as an emergency field for the nation's capital when weather conditions make it necessary.

The new field is five times larger than the National Airport at Washington, and four times the size of LaGuardia Field of New York. Its cost was \$15,000,000, of which Baltimore provided \$12,000,000 and the Federal government the rest. Access roads are being built by the State of Maryland.

Science News Letter, June 3, 1950

GEOPHYSICS

Need Seasickness Remedy For Journey to Mars

➤ MOST of the future rocket journey to Mars is expected to be peaceful gliding in soundless space—but there's an area 30 to 50 miles above the earth where you had better have your seasick cup ready.

This is the conclusion of Dr. William Kellogg of the Institute of Geophysics, University of California at Los Angeles, who has just completed a study of the upper atmosphere.

The area is one of great turbulence where king-sized storms dwarf the most violent Atlantic hurricanes and Pacific typhoons and where winds sometimes reach velocities of an estimated 600 miles per hour.

This wild, windy region exists just above a layer in the upper atmosphere known as the ozone layer which absorbs a large amount of ultraviolet radiation from the

sun and becomes super-heated. Just above is a considerably cooler layer. The rapid exchange of heat between the two layers probably accounts for the high turbulence, says Dr. Kellogg.

He bases his beliefs on four types of scientific evidence: (1) observation of meteor trails, (2) observation of noctilucent clouds in the area, (3) recordings carried by V-2 rockets, and (4) theoretical consideration of temperature changes.

It has been noted that meteor trails at the 30-to-50-mile altitude are sometimes torn apart. The thin, noctilucent clouds, which can be observed only at twilight, suddenly change shape and move rapidly. Research rockets have recorded up-drafts and down-drafts that approach the speed of sound.

One of these powerful up-drafts would be useful in giving a Mars-bound rocket a tremendous "boost" toward its destination. On the other hand, should the pilot encounter a down-draft, he would be bucking the world's biggest head wind.

Science News Letter, June 3, 1950

OPHTHALMOLOGY

Modern Drugs Reverse Old Age Eye Changes

➤ MODERN drugs can reverse certain old-age changes in the eyes and reduce the loss of sight, Dr. Francis W. Parker, Jr., of Rockford, Ill., reported at the meeting of the Illinois State Medical Society, at Springfield, Ill.

The drugs Dr. Parker reported as helpful are dicumarol, rutin and cevitamic acid. They act to relax and dilate blood vessels and aid circulation of blood through them, he explained.

The patients who could be helped by prompt diagnosis and early treatment with these drugs, he said, are those with hardening of the arteries in the retina. This is the tissue at the back of the eyeball which receives light impressions and acts like the film in a camera. The damage to these arteries causes loss of sight.

"Visual acuity," Dr. Parker said, "can be recovered and maintained in these patients."

Science News Letter, June 3, 1950

HOME ECONOMICS

Cook Beef With or Without Bone; Flavor Not Affected

➤ MANY people believe that beef cooked with the bone has a flavor superior to a similar cut boned before cooking. You can cook your beef either with or without the bone and the flavor is not affected.

This was reported by Drs. Pauline Paul, Mary L. Morr, Lyman Bratzler and Margaret A. Ohlson of Michigan State College, East Lansing, to the Institute of Food Technologists in Chicago. They made their study to find out whether locker space in freezers could be saved by storing beef after boning without sacrificing flavor in the cooked beef.

Science News Letter, June 3, 1950

IN SCIENCE

NUTRITION

Fatty Acids May Be Important to Health

➤ HAD your "fatty acid" pills today?

That's what you and I may be asking one another in the near future, according to Dr. James F. Mead and Arthur B. Decker of the Atomic Energy Project at the University of California at Los Angeles.

Recently completed studies by these two biochemists indicate that the little-known but essential fatty acids in the human body may play as important a role in maintaining good health as vitamins.

Experiments by Dr. Mead and Mr. Decker with young mice show that animals on a fatty acid-deficient diet never attain normal growth and manifest certain skin diseases like those resulting from a lack of vitamins. In addition, female mice become sterile and adults succumb quickly to radiation.

It is Dr. Mead's belief that human beings would react to a complete lack of fatty acids in the diet in the same manner as mice. Our present-day accent on high carbohydrate foods, he thinks, could produce symptoms similar to those observed in mice.

Because animals are unable to synthesize them, the essential fatty acids are obtained directly from vegetable foods—particularly corn, cereals and vegetable oils. Dr. Mead thinks that fatty acid pills could be produced fairly inexpensively from linseed oil.

Science News Letter, June 3, 1950

MEDICINE

Compound F, Cortisone Relative, Isolated

➤ A CLOSE relative of cortisone, famous wonder drug for arthritis and other ills, has now been isolated from the blood. Heretofore this chemical, known as compound F, had only been obtained from the adrenal glands themselves, which produce it.

Isolation of the compound from blood was reported by Drs. Don H. Nelson, Hans Reich and Leo T. Samuels of the University of Utah College of Medicine.

They got the compound in blood from the veins of the adrenal glands of dogs whose glands had been stimulated by doses of the pituitary gland hormone, ACTH. They did not find cortisone itself, or compound E. Both cortisone and compound F had originally been discovered in the glands by Dr. E. C. Kendall of the Mayo Clinic.

Details of the Utah research and a new method of analyzing the blood for hormones appear in the journal, SCIENCE (May 26).

Science News Letter, June 3, 1950

CE FIELDS

PLANT PATHOLOGY

Fast-Spreading Fungus Attacking Gladiolus

► IN little less than three years, a new fungus disease attacking the U. S. gladiolus has spread from Florida north to New York State and west to Michigan.

The disease is called curvularia. It hits the stems, leaves and flowers of the gladiolus, leaving the mature plant covered with powdery black spore spots, or completely killing young gladiolus bulbs. Although similar to the widespread botrytis disease in its effect, curvularia likes hot, humid weather while botrytis thrives when it is cool and damp.

For home gardeners who have planted gladiolus bulbs this year, Drs. W. D. McClellan and N. W. Stuart, U. S. Department of Agriculture, tell what to do if the characteristic pinhead-size spots appear on the flowers.

A spray made of one ounce of the chemical parzate in three gallons of water will give satisfactory control, if applied when the spots are first observed and repeated at frequent intervals as long as the weather remains hot and humid.

Science News Letter, June 3, 1950

MEDICINE

Betatron Could Help 10% of Cancer Patients

► HELP for about 10% of patients with some kinds of cancers can be given by a 26,000,000-volt betatron such as that at the University of Illinois Research and Educational Hospitals in Chicago.

This figure on cures to be expected by the betatron comes from experience with the machine in treatment of 20 patients since last August when it first was put to clinical use. The results are reported by the American Cancer Society which helped finance accessory equipment for the machine.

One patient with cancer of the palate was able to eat after five weeks of treatment had shrunk his cancer, Dr. Roger A. Harvey, in charge of the betatron treatments, reported. Some lung cancer patients had decreasing cough and pain as treatment progressed. Elderly patients with bladder cancer showed some cancer destruction with little reaction in normal tissue.

In 90% of cases, the American Cancer Society stated, the betatron is "no more effective than standard X-ray equipment of 200,000 volts or less."

The beam from the betatron can penetrate a little deeper into the body than lower voltage machines and its rays are not scattered so much. It is, however, very ex-

pensive to operate, costing one dollar a minute exclusive of labor and other side expenses. The longest daily treatment lasts nine or 10 minutes. Only a few patients can be accommodated and there is now a long waiting list.

Science News Letter, June 3, 1950

CHEMISTRY

Spices for Seasoning Also Prevent Food Rancidity

► THE pepper, nutmeg or caraway with which you may season your food also serves another purpose: These and certain other spices prevent food's edible fats from turning rancid.

This discovery was made by Dr. J. S. Aggarwal and S. C. Sethi of the National Chemical Laboratory in Poona, India. Previously it has commonly been assumed that spices were added to foods, particularly in tropical countries, to cover up rancidity or decay.

They report that cumin, caraway, cinnamon leaf, nutmeg, cloves, pepper, fenol tumeric and red chillies are among the spices that will preserve fats, even under very severe oxidation tests.

Science News Letter, June 3, 1950

CHEMISTRY

New Non-Fattening Sugar Substitute Invented

► A NEW rival to saccharin as a sugar substitute avoids any bitter taste. It will sweeten without fattening and can be used in diabetic as well as reducing diets.

Sucaryl is the name given to it by its manufacturers, Abbott Laboratories. It has no bitter after-taste, which some persons complain about in saccharin, sugar substitute now widely used. And Sucaryl is stable so that it can be used in cooking, baking or canning without losing its sweetness. The heat of cooking decomposes saccharin, causing it to lose sweetness.

The new sweetening agent will be available in drug stores without prescription, but the manufacturer advises using no more than eight tablets per day. Patients suffering from severe kidney ailments are advised to take Sucaryl in moderate amounts and under a doctor's prescription.

An unexpected sweet taste on the cigarette a young chemist was smoking led to Sucaryl's discovery as a sugar substitute. The chemist is Dr. Michael Sveda, now a researcher at the Cleveland laboratory of Du Pont's Grasselli Chemicals Department. While working for his doctor's degree under Prof. L. F. Audrieth at the University of Illinois, Dr. Sveda discovered the sweet taste on his cigarette. It came, he found, from sodium cyclohexyl sulfamate, a new compound he had synthesized.

Science News Letter, June 3, 1950

FOOD TECHNOLOGY

Don't Kill Tired Hog; Give It Sugar and Rest First

► PORK from hogs that have been fed sugar and then allowed to rest 12 to 24 hours before being slaughtered lasts longer in storage than meat from hogs that are tired when killed. Studies supporting this were reported to the Institute of Food Technologists by Dr. N. E. Gibbons and Dyson Rose of the National Research Council of Canada.

They also found that the color of unsmoked bacon and ham remained red on cut surfaces long after similar meat from tired hogs had become brown and unattractive.

Science News Letter, June 3, 1950

NUTRITION

Rays Sterilize Fillets Without Amino Acid Loss

► FISH fillets were sterilized by radiation after being wrapped in plastic without any loss of nourishment so far as 10 protein-building amino acids are concerned. Tests showing this were reported by Drs. Bernard E. Proctor and Darshan S. Bhatia of Massachusetts Institute of Technology.

Haddock fillets, heat-sealed in polyethylene bags, were placed on a canvas belt moving at a certain rate under the cathode ray beam from a Van de Graaff generator to effect the sterilization. Ten amino acids were then determined in the irradiated fillets, and also in fillets that had not been irradiated. The method of sterilization did not result in a reduction of any of the amino acids tested, they reported to the Institute of Food Technologists in Chicago.

Science News Letter, June 3, 1950

PHYSICS

Atom Bomb Element Yields New Light-Weight Isotopes

► THREE new light-weight varieties of the transuranium element, neptunium, are announced by a University of California team of scientists to the American Physical Society through PHYSICAL REVIEW (May 15). The new isotopes have atomic weights of 231, 232 and 233 and they are made by smashing heavy hydrogen (deuterium) hearts into heavier atoms of uranium, the element 92 necessary to the atomic bomb.

Six other isotopes of this element number 93 in the periodic table were known previously. All of the new isotopes live only a matter of minutes, but there is one very long-lived variety of neptunium 237 discovered during atomic bomb research during the war. The new isotopes are believed to undergo fission.

The discoveries were made by Drs. L. B. Magnusson, S. G. Thompson and G. T. Seaborg.

Science News Letter, June 3, 1950