

MEDICINE

Cretin Dogs Promise Help In Artery Hardening Search

► A SUCCESSFUL means of producing cretinism in dogs gives medical science a new approach to the cause and treatment of hardening of the arteries, one of mankind's unconquered diseases.

Reported to the American Medical Association meeting in Atlantic City, N. J., cretinism was produced by University of Chicago surgeons by injecting radioactive iodine either into the mother dog two weeks before the pups are born or into the pups two or three days after birth. This destroys the thyroid glands, producing cretinism similar to that which occurs in human beings.

Nine months after birth the cretinous dogs become extremely fat and lethargic. Fatty substances and cholesterol, involved in artery hardening, appear in the blood. Such dogs will be living laboratories for study of arteriosclerosis and use of fat by the body.

The investigators are also using the cretinous dogs for the study of the way the various glands work together in the body. They have found that the sex glands remain immature when the thyroid is destroyed, and the pituitary gland enlarges. So far, the lack of thyroid does not seem to affect either the adrenal glands or the pancreas.

Dr. Lester R. Dragstedt, chairman of the department of surgery, Dr. Edward R. Woodward, instructor, Dr. Harry A. Oberhelman, research assistant, and Dr. Curtis A. Smith, assistant resident, developed the new method.

Science News Letter, June 23, 1951

AERONAUTICS

Jet Transports Schedule: 10 Hours, Canada to Tokyo

► TEN HOURS in the air from Vancouver, B. C., to Tokyo, Japan, is scheduled as flight time for two jet-propelled 50-passenger airliners which will begin regular service on this route within a year. The return trip will require only eight hours because the airships will be aided by the prevailing westerly winds.

These airliners are in the 500-mile-per-hour class and will make the trip in half the time required by the transports now on the route. They are British De Havilland Comets, powered by four De Havilland "Ghost" turbo-jet engines. They will be operated by Canadian Pacific Airlines, Ltd., and will make stops at Anchorage, Alaska, and on one of the most westerly of the Aleutian islands.

Details of this "jet" route were presented to the American Society of Mechanical Engineers meeting in Toronto, Canada, by Wallace G. Townley, Canadian Pacific's general manager of operations. An overall saving of 10% to 20% is anticipated by the

company, he said, largely because of low maintenance cost and also because two of these jet-airliners will do the work of four of the present type transports.

Such components as propellers, cabin superchargers, cabin and thermal de-icing heaters are lacking in the turbo-jet aircraft, he stated. It is not necessary for the Comet to incorporate many of the space-consuming and weighty passenger service facilities which are required in current transports.

"This is due primarily to the speed of the Comet which, in round terms, is double that of current transports. This aircraft therefore reaches its destination in half the time and the necessity for providing meals, refreshments and other services is consequently reduced."

Science News Letter, June 23, 1951

PUBLIC HEALTH

Learn to Swim for Safety on Vacations

► VACATIONS CAN be more fun, and safer, if you know how to swim. The swimmer can have not only the fun of swimming but can more safely enjoy canoeing and sailing. If you can not swim, try this summer to learn this pleasant, healthful activity.

Do not rely on water wings, old inner tubes or other air-filled toys to hold you up if you can not swim. A sudden leak may leave you struggling without support in deep water. Other rules for safe swimming, as important for practiced swimmers as for beginners, follow:

Swim only at beaches where lifeguards are on duty.

Do not swim out too far beyond your depth.

Always make sure you are accompanied by a boat when swimming long distances.

Never play practical jokes on persons in the water, especially on those who can not swim.

Before diving, always check on the depth of the water and make sure there are no obstructions hidden below the surface. This is especially important at low tide.

Don't go in the water immediately after eating. If subject to cramps, wait for at least two hours and then do not go in water beyond your depth.

If you have a heart impediment, be very careful to avoid sudden shocks while bathing.

Never swim in polluted waters which have been condemned by the Health Department.

Watch the babies and small children. Many toddlers will daringly follow grown-ups or big boys and girls into the water. If they lose their footing or are covered by a wave, they may be drowned before they are missed, unless some one has the job of keeping constant watch over them.

Science News Letter, June 23, 1951

IN SCIENCE

INVENTION

Throw-Away Dust Collector Features New Air-Cleaner

► THROW-AWAY dust-collecting electrodes in a home or office air-cleaning device of the type known as an electrostatic precipitator, on which a patent was issued by the government, eliminate the usual need of flushing the cleaner out with water to remove collected particles. The electrodes are inexpensive.

Electrostatic precipitators remove dust and pollen passing through them by subjecting the particles in the air to static electricity charges so that they are attracted and held by electrically charged plates or electrodes. The usual type is connected to the water system so that collected dust may be washed out at intervals. In this type, when the collector cell becomes loaded the electrical power is shut off, the outlet end portion of the precipitator is removed, then the collector cell taken out and replaced by a clean one.

Inventors are William J. Roos, Sharon, and Ray W. Warburton, Medfield, Mass. Patent 2,556,982 was awarded to them. Westinghouse Electric Corporation, East Pittsburgh, Pa., has been assigned the patent rights.

Science News Letter, June 23, 1951

MEDICINE

Publicity on Cancer Shown To Be Paying Off

► FIRST HINT that the intensive publicity, diagnosis and research progress against cancer is paying off shows up in life insurance figures.

Cancer in all forms, leukemia and Hodgkin's disease actually showed reduced deaths for 1949-50 compared with 1946-47 for white women aged 25 to 74 years. For white males there was improvement at ages 1 to 14.

For cancers at accessible sites for white males and females the trend was generally downward, and this was generally the case for the hidden locations as well but not to such an extent.

There were sizable death rate increases in some kinds, however, such as cancers of the lungs, pleura, bronchial area and pharynx.

The statistics compiled by Metropolitan Life experts are considered encouraging for the future because previously there had been a general rise in cancer mortality.

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CE FIELDS

HORTICULTURE

Once-a-Week Soaking Better for Home Garden

➤ **HERE'S ADVICE** for home gardeners: A good irrigation once a week will do more for your half-grown vegetables than a light sprinkling every day.

Experts at the University of California Agricultural Extension Service, Davis, Calif., say it is the amount of water the plants get, and not the number of irrigations that count.

During the summertime much of the water applied to the surface four or five inches of soil is lost through evaporation. The water that penetrates deeper into the soil will stay there for the plant to use.

Although soil moisture and condition of the plants are the best indications of need for water, there are three main irrigation periods to consider in a home garden.

1. While the seeds are germinating, light sprinklings will keep the top few inches of soil moist, which is all that is necessary.

2. While the root system is becoming established, light sprinkling may again be necessary. However, gardens started in the spring when the soil is filled with moisture from winter rains may grow fairly well for several weeks without further water.

3. When the plants are fairly well advanced, the water in the root zone begins to dwindle. It must be replaced by irrigations that will penetrate to a depth of at least two feet. On a sandy soil, sprinklers should run from two to three hours in one spot to reach down two feet. On heavy soils it may take four to five hours to wet to that depth.

Science News Letter, June 23, 1951

TECHNOLOGY

Electronic Machine Sorts Lemons by Ripeness Color

➤ **AN ELECTRONIC** machine that sorts lemons according to color has successfully completed a trial under packing house conditions.

Since lemons color-ripen unevenly they must be carefully sorted for marketing. A tree at harvest carries fully ripe, silver, light green, and dark green fruits. The fully tree-ripened fruit goes to market immediately; the others are stored to color-ripen later.

The machine operates by measuring the amount of light reflected by the lemon.

With the cooperation of the Western Regional Research Laboratory at Albany, engineers of the University of California found that in a particular portion of the

infra-red region of the color spectrum, yellow lemons had 90% reflectivity but the dark green only 10%.

A metering device feeds the lemons properly oriented in single file into a sorting chamber. When the illuminated lemon passes through a bank of light-sensitive cells, its reflectivity response is used to set up electrical operations in the signal and power circuits. These control the gates for routing the fruit into its correct color class.

If the lemon is fully ripe, it passes through the mechanism without operating a gate. If it is silver or light green or dark green, the amplified energy from its reflectivity response signals the correct gate combinations to direct it into the proper color class. Before the next fruit is processed, the gate must close. All this takes from one-fourth to one-fifth of a second. Thus, a single unit machine color sorts four to five lemons a second.

Since it is responsive to the chlorophyll in the fruit, the color sorter so far used only on lemons may be adaptable for use with other fruits.

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MEDICINE

Gout Attacks Yield to Benemid, New Chemical

➤ **ATTACKS OF** gout may be cut down in number and severity or prevented altogether through long-term use of a chemical called benemid, Drs. Bernard M. Norcross, L. Maxwell Lockie, John H. Talbott and Charles Bishop of Buffalo, N. Y., reported at the meeting of the American Rheumatism Association in Atlantic City, N. J.

They gave the chemical to more than 25 gouty patients. Some got it in combination with such standard gout medicines as colchicine and salicylates.

Complications of the disease, as well as attacks, may be prevented or reduced to a minimum, the Buffalo scientists believe.

Benemid's chemical name is p-(di-n-propylsulfamyl) benzoic acid. It is also being used to step up the effects of PAS in treatment of tuberculosis.

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INVENTION

Automatic Lock for Home Windows Patented

➤ **AN AUTOMATIC** lock for the home window brought Patrick F. Foley, New York City, patent 2,556,720. It is a simple device, including a bracket to attach to the window sash on which are lugs, and a pivoted eccentric with teeth which provide a curved serrated gripping surface to engage the lugs. A rod from the eccentric passes to another bracket of the other sash and has a coiled spring on it which forces the wedging action of the eccentric.

Science News Letter, June 23, 1951

INVENTION

Now Standing Auto Can Have Air-Conditioning

➤ **COOLING SYSTEM** for automobiles, for the comfort of drivers and passengers, utilizes a box containing ice on the floor in the front of the car through which air is forced by the driving speed or, when needed, by an electric blower. The blower used is the one employed to operate the ordinary defroster. The feature of this cooler is that it delivers refreshing air even when the car is standing. Inventor is George R. Lepper, Chicago. Patent 2,557,004 was awarded to him.

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ELECTRONICS

New Transparent Screen Gives Clearer Television

➤ **BETTER TELEVISION** pictures are promised with a new transparent screen for picture tubes revealed by General Electric Company of Schenectady, N. Y. The screen is still in the development stage but tests to date indicate that it gives clearer pictures than present screens, with greater contrast between light and dark areas.

Present tubes are coated inside with a powder which appears white or gray, which is the darkest that any areas on the screen can be, the scientists who developed the new screen explain. When looking at one with a transparent screen, the viewer sees through it into the dark recesses of the tube. It is this greater degree of darkness that is available for producing dark areas on the screen to contrast with the light areas.

Ordinarily the powder coating inside the screen is necessary to achieve a picture. It is caused to glow wherever it is struck by a beam of electrons. Dr. Ferd E. Williams, GE scientist, discovered that a transparent screen capable of glowing under the impact of electrons could be made from zinc fluoride mixed with manganese. These chemicals were heated in a vacuum so they evaporated and condensed on the glass to be used as a screen in a thin transparent film about one eight-thousandth of an inch thick.

Further treatment is needed to make the film withstand continued bombardment of electrons. This includes heating to about 930 degrees Fahrenheit and passing a stream of hydrogen sulfide over it for a ten-minute period. In an improved process, full treatment is given in one operation. The zinc and manganese are deposited on a heated glass surface in the presence of hydrogen sulfide.

In addition to Dr. Williams, other scientists who helped develop the transparent screen are Dr. Frank J. Studer, D. A. Cusano, A. H. Young and Dr. L. R. Koller.

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