INVENTION

Improved Garbage Truck Packs Refuse Before Loading

➤ THE GARBAGE truck on the city streets will be less offensive with an improved type on which American patent 2,561,608 was issued to Ronaldo Boissonnault of Montreal, Quebec. Sicard Inc., of the same city, has acquired the patent rights. It has at its rear a compartment to receive the refuse gathered by attendants. The compartment is hinged to the top of the garbage-holding body of the truck and can be swung into an elevated position to discharge its load with power provided by the engine. An important feature is means for compressing the refuse before it is dumped through a trap door into the body of the truck.

Science News Letter, August 4, 1951

WILDLIFE

Wild Mouse Hunt In New Hampshire

➤ BOYS AND GIRLS in New Hampshire are trying to catch wild mice of different varieties and bring them to a wild mouse "receiving station" established in Deering, N. H., under the New Hampshire chapter of the Jackson Laboratory Association.

Because of the possibility of discovering in wild animals hereditary traits not found in the inbred strains studied at the Jackson Laboratory, Bar Harbor, Me., young scientists are being encouraged to trap mice, learn how to keep them in captivity, and observe their habits and behavior.

Breeding of the wild mice is planned and when this is successfully accomplished any unusual varieties developed will be donated to professional scientists for further study.

A barn behind St. Mary's Rectory in Deering has been established as a wild mouse laboratory.

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PUBLIC HEALTH

Follow Rules on Lightning Danger

➤ PEOPLE WHO live in the country and city dwellers who spend summer vacations in the country should learn the rules for avoiding being struck by lightning. Summer is the lightning danger season and about 250 Americans are killed by it each year.

The rules are simple. Metropolitan Life Insurance Company safety experts offer these:

Don't seek shelter under a tree, or remain in a broad, open field or small boat, or take refuge in a small, isolated shed in an exposed area during the storm. Never stay in swimming; you can be electrocuted by a charge carried by the water from a bolt striking at some distance. The baseball diamond and the golf links, as well, can be danger spots when lightning strikes.

Homes properly equipped with lightning rods afford practically complete safety. The steel structures of tall buildings act as lightning rods and thus increase the safety of city dwellers. The metal bodies of automobiles protect the occupants even if the vehicle is struck by lightning.

Lightning deaths strike about five times as often at men and boys as at girls and women. This is what might be expected from the fact that men and boys take part in more outdoor activities both at work and in sports.

Climatic conditions play an important part in lightning mortality. The highest death rates are found in some of the mountain states and bordering areas, including Idaho, Montana, the Dakotas, Wyoming, Colorado and New Mexico. Arkansas, Mississippi, Alabama, South Carolina and Florida are also danger spots. The Pacific coast, New England and the middle Atlantic region have the lowest death rates from this cause.

Rhode Island has had no lightning deaths since 1936.

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INVENTION

Removing Clay Under Coal Aids Underground Burning

➤ THE RELATIVELY new process of making combustible gases by burning coal in the underground natural seams in which it occurs in nature will be aided, it is claimed, by a process of removing clay from under the coal with the aid of water.

For this clay-removal process, patent 2,561,639 was granted to Frederick Squires, Champaign, Ill. Better burning is provided by exposing the under surface of the coal veins, the inventor states.

In the process of gasifying thin layers of coal underground at least two wells are sunk into the coal. Fire is started in one. High pressure air or oxygen is forced down the well to support the fire and to drive the gases of combustion through the coal to the other well for recovery.

To aid the process, which is still in experimental stage, a small tunnel is sometimes dug through the coal from one well to the other before the fire is started. Burning then takes place along the walls of the tunnel.

In the new process the wells extend through the coal into the underlying clay. Water is put down under pressure and is injected into the clay by means of a pipe extending down into it. Water mixed with clay comes to the surface in the space between the pipe and the walls of the drilled well. When the clay is removed between two wells, the water is pumped out and the burning started.

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IN SCIENC

VETERINARY MEDICINE

Sugar Dripped into Vein Helps Sick Cows

➤ SICK COWS are saved from death by having a sugar solution dripped into their veins over a long period. A new technique that makes this possible is reported by the American Veterinary Medical Association in Chicago.

The method itself, called slow infusion, is widely used in human medicine and for several years has been used for dogs and cats. Its use in large animals has been prevented by necessity to restrain the animal or have someone in constant attendance. The new technique eliminates this need.

The veterinarian suspends a large container of glucose (sugar) solution above the sick cow. A rubber tube is then extended from the jug and connected to a plastic tube inserted in the cow's jugular vein. The plastic tube is rigged so that it sends the fluid very slowly into the blood stream.

The treatment is said to have given excellent results in serious cases of acetonemia and is especially recommended for cattle that are extremely weak.

Acetonemia is a common ailment among dairy cows during the lactation or milking period. Affected animals may lack appetite and get wobbly and stiff or even develop "crazy" symptoms. Milk production declines and the animal loses weight. Unless treatment is begun promptly, the sick cow may go into a coma and die.

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TECHNOLOGY

Low-Grade Coal Gives High Heat in New Cyclone Furnace

➤ WIDER USE of low-grade coal is predicted by engineers of the Babcock and Wilcox Company of Barberton, Ohio, with an improved type of cyclone furnace now being tested under commercial conditions.

A cyclone furnace is a relatively new device which burns crushed coal and other fuels in a whirling tornado of flames within a cylindrical chamber. Fuel and preheated air are injected under pressure at one end of the unit, and high-temperature gaseous products are emitted at the other.

Action of the furnace coats the walls of the chamber with a molten layer of ash into which the fuel is thrown by centrifugal force, the engineers explain. Combustible materials burn, giving up heat and the non-combustible residue melts and drops into a pit as slag.

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E FIELDS

TECHNOLOGY

Glass Fiber Draperies Now Made in Permanent Colors

➤ PRIVATE HOMES as well as public places can now have window draperies of flame resistant fiber glass which, by a new process, are given permanent colors without reducing other desirable properties such as wrinkle and abrasion resistance and silk-like softness.

The new dyeing process is the result of work carried out jointly by General Aniline & Film Corporation, General Dyestuff Corporation and the Owens-Corning Fiberglas Corporation. There has been an increasing interest in non-flammable decorations in public places because of a number of recent fires. Glass is noncombustible, making fiber glass draperies highly satisfactory.

Fiber glass has no affinity for ordinary dyestuffs. To give them color, pigments with resin binders were used. Such fabrics, in most cases, had the disadvantage of being too stiff and lacked proper draping qualities. Also the resin binders were not completely flame resistant.

In the new treatment, production of piece goods with silklike softness and drape is accomplished by a new heat cleaning process in which the woven materials are treated for a matter of seconds at high temperatures. This treatment burns off the sizing, renders the fiber soft and pliable, and permanently sets the crimp which gives it wrinkle-resistance.

Affinity of glass piece goods for vat pigments was developed through the cross-linking of methyl vinyl ether maleic anhydride copolymer with polyvinyl alcohol. Modifications of the process make possible the glass fabrics of color fastness.

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OCEANOGRAPHY

Ship Sails to Survey Alaskan and Pacific Waters

➤ TO EXPLORE Alaskan and northern Pacific waters, the *Horizon,* research vessel of the University of California's Scripps Institution of Oceanography, sailed from San Diego last month on a two-month cruise.

Purpose of the cruise is to gather oceanographic information to fill in blank areas on the charts of the Pacific in the area north of the San Francisco-Hawaii steamer lanes and south of the Aleutians.

The cruise will be sponsored by the Office of Naval Research and made in cooperation with the U. S. Navy Electronics Laboratory, San Diego. A distance of about 7,000 nautical miles will covered on the trip. Standard hydrographic observations will be taken at regular distances, and continuous soundings of the bottom will be made.

First feature to be studied on the cruise will be the Mendocino escarpment, giant submarine cliff that extends several hundred miles due west of Cape Mendocino in northern California. Attempts will be made to dredge samples on the northern ridge of the escarpment.

Eleven hundred miles west of the coast, the vessel will turn north to the center of the Gulf of Alaska. Samples will be dredged from the tops of seamounts south of the Alaskan peninsula.

The *Horizon* will then call at Kodiak, in the only stopover of the trip, before sailing southwestward along the Aleutian trench to Unimak Pass. From Unimak Pass it will turn southward on an 1,800-mile voyage to a point approximately 500 miles northeast of Honolulu. Thence it will work its way back to San Diego along a suspected escarpment, facing the Mendocino escarpment, in the vicinity of 33 degrees north.

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WILDLIFE

Badger Steals Show At Yellowstone Talk

➤ TOURISTS EXPECTED to hear a talk on wildflowers when they attended a National Park Service campfire talk in Yellowstone Park, Wyoming, recently, but a badger stole the show from the ranger-naturalist.

While the program was under way, a very large badger with a ground squirrel in its mouth came out of its den just before dark, just above the projection screen. It made three appearances. Wildflowers were forgotten as the badger put on its act.

The out-door amphitheater at Mammoth Hot Springs is an excellent place to view the park's wildlife. Elk, coyote and bear have made guest appearances at evening lectures. Moles inhabit the area and nightly race between the log seats to the delight of some travelers and to the horror of others.

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MEDICINE

Cortisone for Eye Diseases By New Production Method

➤ A NEW method of producing cortisone, famous anti-arthritis remedy, has been developed by Schering Corporation of Bloomfield, N. J. First Schering cortisone product to be put on the market is a specially developed product for use in eye diseases. It is called Cortogen Acetate Ophthalmic Suspension and is sold only on prescription.

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CHEMISTRY

Cholesterol, Body Chemical, Synthesized for First Time

➤ CHOLESTEROL has been synthesized as another step in the chemical understanding of important and characteristic substances in the living body.

What is called "the total synthesis of cholesterol" is announced in the JOURNAL OF THE AMERICAN CHEMICAL SOCIETY (June) by the same team of Harvard chemists who have been making various kinds of drug substances, like the sex hormones and cortisone, from chemicals that do not have their origin in animal products often expensive and difficult to obtain.

Total synthesis means that the starting point in building up the material is a relatively simple chemical, usually found in coal tar, and there are added to it, step by step, other relatively simple substances until the complexities of the natural substance are achieved.

Cholesterol is the derivative of fatty substances and is found in blood and other parts of the body. It is called "the characteristic sterol of higher animals."

Drs. R. B. Woodward, Franz Sondheimer and David Taub, working in the Converse Memorial Laboratory of Harvard University in Cambridge, synthesized cholesterol as a part of an extensive research in which they simultaneously have achieved the total synthesis of some naturally occurring steroids, among them the hormones desoxycorticosterone, progesterone, and testosterone.

Cholesterol is of special interest because of the controversy over the part that it plays in causing arterial hardening when present in excessive amounts in the blood.

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INVENTION

Talking Escalator Announces Bargains

➤ THE DEPARTMENT store moving-stairway, or escalator as it is called, will be able to "talk" to its riders with a device on which the government issued a patent.

The device is a series of loudspeakers in the stationary side walls of the escalator which will repeat over and over again the goods the customer will find on the floor being approached. The story it will tell is similar to the familiar one now repeated by elevator operators.

The messages will be of such length that the complete story is told in the time required for the passenger to be raised from floor to floor. The voice will be loud enough to reach the escalator users but not to disturb customers on the sales floors.

Patent 2,561,959 was issued to Maarten van der Reis of New York City for this moving-stairway broacasting device.

Science News Letter, August 4, 1951