

## Do You Know?

The term *saran* applies to a series of resins chemically known as vinylidene chloride copolymers from which many plastic articles are made.

Flexibility is the property of *glass fibers* which distinguishes them from other glasses; they are flexible merely because they are exceedingly thin in relation to their length.

*Electrochemical* processes are being used more and more in industry for the preparation of a variety of materials such as chlorine and other gases; they are increasingly used also in refining metals.

The famous *Kensington stone*, so-called because found near Kensington, Minn., is now at the Smithsonian Institution, Washington, D. C.; its runic inscriptions purport to be the last message of a lost Norwegian exploration party perhaps massacred by Indians in 1362.

### ORDNANCE

## Shotgun Fired By Bringing Up Against the Shoulder

➤ A SHOTGUN that can be fired by merely bringing it sharply against the shoulder, without touching the trigger, is the subject of patent 2,441,787, granted to Ernest Zryd of Beloit, Ohio. A movable section of the butt-plate is linked to the trigger mechanism by means of a rod running through the butt; when this is pressed it fires the piece. It is thus possible to use the weapon with mittened hands in cold weather.

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waging of a major battle.

The world's unappeasable hunger for bread gives great importance to the fight against insects that attack stored grain, the speaker continued. We have been losing about 300,000,000 bushels of stored grain every year, worth more than \$600,000,000 at present prices.

### CHEMISTRY

## Urge Sharing of Isotopes

American scientific group proposes that the international office of the United Nations be empowered to distribute isotopes for research abroad.

➤ DISTRIBUTION of "non-dangerous" isotopes, by-products of the piles which are used to make atomic bombs, by an international office of the United Nations was proposed by the Federation of American Scientists meeting in Washington.

The Federation emphasized that the isotopes are important for research in medicine, agriculture and industry but are not useful for making atomic bombs. The suggested international office would set standards for the handling and naming of the isotopes in addition to serving as a clearing house for distribution of the material.

Although the U. S. has a near monopoly of these isotopes at present, the Federation report said that small uranium piles which can produce these important by-products are now operating in Canada and Great Britain.

"In France and probably the U. S. S. R., such piles are scheduled for early construction and operation," it was reported. Other countries listed as planning production of isotopes are Sweden, Norway, and India.

Setting up an office for international distribution of isotopes would aid the international exchange of scientific information, counteract ill feeling toward this nation by some scientists abroad and advance the peaceful uses of atomic research, the report contended.

Warning of a "disturbing change" in the attitude of some scientists in non-English-speaking countries toward the U. S., the report declared, "Upon investigation we believe most of the accusations and suspicions regarding American behavior to be unwarranted, but the circumstances are such that denial is difficult or impossible."

A system of international distribution of isotopes would bring about better un-

derstanding among scientists of many nations, the Federation argued.

Losses in corn alone amount to 150,000,000 bushels a year, enough if saved to feed 8,800,000 hogs to a 225-pound market weight. By rat-tight construction, DDT spraying against insects and frequent inspection during the storage period these losses must be reduced.

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The report suggested that an international organization such as the United Nations Atomic Energy Commission, the World Health Organization or the United Nations Educational, Scientific and Cultural Organization call an international conference on isotopes.

"We believe that the discussions might lead to an executive agreement or charter setting up an international office within the United Nations framework to deal with the distribution of isotopes," the report said.

The Federation explained that distribution of isotopes by a UN group might not help in reaching an agreement in the control of atomic weapons, but the report said that an international institution operating in the field of atomic energy might "modify some viewpoints regarding control."

Prof. Arthur Roberts, physicist at the State University of Iowa and chairman of the Federation, said that "the proposal might well be undertaken by the United Nations Atomic Energy Commission if the General Assembly deems it advisable."

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### SOCIOLOGY-PHYSICS

## "Social Physics" Applies Laws of Gravity to Income

➤ A NEW science in which laws of gravity are applied to such matters as rents, land values or the national income was described to the Population Association of America meeting in Philadelphia by Dr. John Q. Stewart, associate professor of astronomical physics at Princeton University.

Although "social physics" is only in its early stages and not yet accepted as

a science, Dr. Stewart said that the principles of mathematical physics can be used in the social field.

Individuals are treated as molecules, he explained. Persons are given "molecular weights," in the way physicists have assigned weights to molecules and atoms. Some individuals have a "weight" of two, while individuals in some groups rate only one-third in the weighing.

With this system, Dr. Stewart has used equations of Newtonian gravitation in what he terms demographic gravitation. The results, which may come out in such units as "persons squared per mile," will show the national income or any of a large variety of other social statistics.

City suburbs, he explained, can be

## ENGINEERING

## Low-Temperature Battery

**Minus 100 degrees is the functioning capacity of new electric batteries now under development. They will have military as well as civilian applications.**

► **ELECTRIC** batteries that will function at a temperature of 100 degrees below zero Fahrenheit are under development for the Army Signal Corps at Ohio State University, it is revealed. Experimental test cells which will operate at this temperature have already been constructed.

Batteries for use at extremely low temperatures have many military applications, but have civilian applications as well. High-flying airplanes in the stratosphere encounter temperatures from 60 to 70 degrees below zero. Guided missiles and the battery-powered radio-sonde, which is carried aloft to report weather conditions by radio, may meet even lower temperatures. Automatic ground-based weather stations in Arctic regions may be required to record and report the lowest temperatures found on the surface, and cold chambers used in research work sometimes have temperatures lower than any known that nature provides.

The selection of an electrochemical system was one of the first problems in developing a low temperature battery. It must be able to withstand long periods of storage under all atmospheric conditions, and not freeze at minus 100 degrees. The electrolyte must not disintegrate at normal or high heat, and also have the proper electrical characteristics to operate equipment at very low temperatures.

compared with the satellites of planets in the solar system. When a satellite gets too close to a planet, it is torn apart. A village near a city "is drawn out in long lines in the direction of the overpowering attraction of the central city," he said, unlike the more isolated village built around a center, or nucleus.

Even the gas laws of physics can be applied to humans, Dr. Stewart contended.

Individuals want some living space of their own which gives the "human gas" a tendency to expand. Populations of cities, he suggested, are a compromise between gravity toward the centers of attraction and the expanding feature of gas.

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In the investigations already made, several solvents that possess the necessary characteristics have been uncovered. Solute-solvent systems were then studied to find good conducting mediums which would keep the internal resistance of the battery at a minimum when far below zero. Present research is directed toward electrode materials to determine the most suitable electrochemical couple, the proper combination of materials to produce electricity, for low temperature operation.

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## CHEMISTRY

## Benzene Hexachloride Found to Flavor Pork

► **BENZENE** hexachloride or 666, potent new insecticide, has been highly successful in ridding hogs of lice and mange; but it is inadvisable to use it on the animals just before they are slaughtered. Experiments in support of this conclusion were reported by Dr. R. H. Grummer, R. W. Bray and Dr. Gustav Bohstedt of the University of Wisconsin.

They treated three lots of pigs with the insecticidal dust, and part of them they also sprayed with a benzene hexachloride solution a short time before slaughtering them. Meat from recently-sprayed animals had "off" taste and

odor when tested by several judges. Cooking smells, described as "medicinal," persisted in the kitchen for a long time after the meat was prepared.

For these reasons, the three scientists recommend that no benzene hexachloride treatment be given hogs for at least ten days before slaughter.

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## MINERALOGY

## New Argentine Mineral Named for National Hero

► A **NEW** mineral has been discovered in Argentina and named after a national hero.

The mineral, called sanmartinite, was found southwest of San Martin. The name is for the city which in turn was named for Gen. Don Jose de San Martin, a leader in the fight for South American independence.

Sanmartinite is a zinc tungstate, first spotted in the study of a sample of tungsten ore. It is a member of the wolframite group of minerals.

First report of sanmartinite in this country was made to the Academy of Natural Sciences of Philadelphia by Victorio Angelelli, Argentine geologist, and Samuel G. Gordon, associate curator of mineralogy and petrology of the Academy.

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## WILDLIFE

## Porcupines Chew Glass, Gnawed Bottle Shows

► **GLASS-EATING** is not confined to a few humans with abnormal appetites; porcupines do it, too. So declares F. W. Preston, glass technologist of Butler, Pa., and to prove it he exhibits a catsup bottle with a hole chewed clear through one wall near the bottom. The unusual specimen was given to him by John Hopkins, a game warden in the hills near Clarendon, Pa.

On this and other bottles bearing porcupine tooth-marks, the animal had apparently set one pair of its chisel-like incisors against the edge, and forced the opposite pair towards it with its powerful jaw muscles, loosening small chips of glass.

Why the animals should want to chew up bottles is still unguessed, unless perhaps it is an appetite for small amounts of the alkali that leaches out of the glass on exposure to the weather.

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