

## GEOLOGY

**Hot Rock Makes Strange Circles in Arctic Canada**

➤ SEVERAL PECULIAR circular forms, looking like meteor craters in reverse or rocky boils on the skin of Mother Earth have been discovered on two Canadian islands in the Arctic Ocean.

One on Melville Island is four to four and a half miles in diameter and rises 739 feet above the surrounding flat country. There is another, about eight miles to the east, almost exactly like the first circular form.

Two smaller circular forms and two much larger elliptical forms were found on Ellef Ringnes Island, about 200 miles to the northeast of Melville. All of the forms were discovered in Royal Canadian Air Force photos.

Geologist I. C. Brown of the Canadian Geographical Survey believes that the large, elliptical forms on Ellef Ringnes Island were formed by hot volcanic rock which could not reach the surface. It could have spread out under the surface, pushing it upward to shape the forms.

The circular forms, he believes, are ring dikes. A dike, to a geologist, is a mass of volcano-formed rock intruded into a fissure of older rock.

Mr. Brown emphasized in the *AMERICAN JOURNAL OF SCIENCE* (Nov.) that the forms had been studied only from photographs and not at first hand.

*Science News Letter*, December 1, 1951

## PUBLIC HEALTH

**What to Do About Acne Problems**

➤ SINCE ACNE is about as common as measles, you have doubtless heard of dozens of remedies, home treatments and diets for it. You may have tried some and found them worthless.

Advice to stop worrying about it because it will be outgrown is hard for most young people to follow. And if the acne is severe, it may put a scar on the personality as well as the skin.

There are some things that can be done to get rid of this trying skin trouble, and one of the first of these should be to see a doctor. If the acne is very bad, the family doctor may refer the young patient to a doctor who specializes in treatment of skin diseases. One of the reasons for seeing the doctor is that no two persons and no two cases of acne are exactly alike. The diet that helps one may not help another.

Second reason for seeing a doctor about the acne is that emotional stresses and tensions play a part in causing the acne or making it worse. Acne hits young people just as they are facing many new experiences in school, on a first job, and when they are starting to "date." Along with the

new experiences come many new feelings and emotional drives. Handling all this causes worry and tension. The young acne patient may find it easier to discuss his problems with his doctor than with his parents, especially since resentment toward his parents may be one of his problems.

Parents and the young acne sufferer will find much useful information and advice in a book, "The Skin Problem Facing Young Men and Women," by Dr. Herbert Lawrence, a dermatologist, or skin specialist, of San Francisco.

*Science News Letter*, December 1, 1951

## TECHNOLOGY

**Pressure System Makes Blast Furnaces More Effective**

➤ AMERICAN IRON blast furnaces could produce an additional 1,000,000 tons of pig iron each year if converted to a new method of operation involving air pressure, it was stated by Dr. B. S. Old of Arthur D. Little, Inc., in Cambridge, Mass. This engineering firm originated the process.

In operating a furnace under this pressure method, the exit-gas system is throttled so that pressures are built up at the top of the furnace. They are built up to about 12 pounds above the normal atmospheric pressure now used. With the system throttled down, the air blown in the bottom of the furnace moves more slowly, so that it is possible to blow a greater weight of compressed air through without blowing valuable ore out of the furnace. The availability of more air permits the burning of more coke per day and thus the smelting of more iron per day.

The first pressure furnace started regular operation in 1946, Dr. Old reports. Eight are now in operation in the United States and one in England. All six of the large blast furnaces under construction in America will operate under pressure, and five old furnaces are now being converted to pressure. Operating cost per ton of iron is reduced by the pressure system, it is claimed, because of the increased output and more efficient use of coke.

*Science News Letter*, December 1, 1951

## INVENTION

**Patent Parachute For Slow Descent**

➤ A PARACHUTE for soldiers designed to reduce the speed of descent as a landing is approached brought patent 2,575,387 to Helmuth and Theobald Kluglein of Valley Stream, N. Y. There are two sets of shroud lines to carry the user. One set is attached to the outer edge of the parachute canopy, the other to a smaller section surrounding the center of the canopy. Means are provided so that the user can shift his weight from one set to the other.

*Science News Letter*, December 1, 1951

**IN SCIENCE**

## TECHNOLOGY

**Nitrogen Grabbed from Air For Agriculture's Benefit**

➤ NITROGEN GRABBED from the air by a new, thermal process developed at the University of Wisconsin will benefit American agriculture and will help to build up our supply of the element for manufacturing explosives and propellants.

A pilot plant for the Wisconsin process, as the method is known, is now producing a ton of 60% nitric acid per day in San Jose, Calif., and another plant will be constructed at Sunflower, Kans. The method uses only air, water and energy for raw materials.

The air is milked of its nitrogen in a high-temperature, specially-constructed furnace to make nitrogen oxides, then the minute amounts of nitrogen oxide formed are recovered and concentrated. Water added to nitrogen dioxide will give nitric acid, vitally needed in the manufacture of explosives and propellants.

The thermal process was developed with the cooperation of the Wisconsin Alumni Research Foundation. Finding a material that would stand up under the furnace temperatures was a major problem in developing the process but a pure magnesium oxide was made to fill the bill.

*Science News Letter*, December 1, 1951

## GENERAL SCIENCE

**Rancher's Gift to Make Arid Regions More Fruitful**

➤ WITH THE ultimate aim of making the world's arid regions more productive, the University of California at Berkeley has announced the establishment of the M. Theodore Kearney Foundation of Soil Science in its College of Agriculture.

The foundation will be devoted to the advancement of knowledge of soil science, including soil-water-plant relations, through basic physical, chemical, biological and hydrological research, with particular reference to arid and semi-arid farming regions.

The new foundation will be endowed with the proceeds of the bequest of Mr. Kearney, prominent rancher in central California in the latter part of the last century, who died in 1906, leaving to the University his estate which included the famous Kearney Vineyard in Fresno County. The endowment now amounts to \$2,268,000.

One third of the total land area of the world is arid or semi-arid. Less is known about the soils in these regions than about those in the more humid areas.

*Science News Letter*, December 1, 1951

# E FIELDS

## TECHNOLOGY

### New Process Extracts Titanium More Easily

➤ A NEW process for the extraction of titanium and zirconium from their ores more economically and in larger quantity than heretofore is claimed by Arthur J. Kerbeczek, Jr., a Ph.D. candidate at Columbia University.

Prof. Herbert H. Kellogg of Columbia's Engineering School plans to present the achievement to the government in the hope that it will make possible the use of titanium on a large scale in ships, weapons, jet airplanes and other war materiel.

The process is an electrolytic method for reducing the chloride, which is prepared from the oxide of the ore. Details are kept secret.

Mr. Kerbeczek worked for three years on the process following suggestions from Dr. Colin G. Fink, inventor of the commercial method of chromium plating.

Titanium is the ninth most abundant element in the earth's crust, and it is light in weight, with high melting point and high resistance to corrosion.

The new process is expected to be useful also for the extraction of zirconium, a metal somewhat similar to titanium, that the Atomic Energy Commission desires in large quantity.

Science News Letter, December 1, 1951

## TECHNOLOGY

### Viscose Rayon Brewing Bags Ease Coffee-making Job

➤ COFFEE BAGS, larger but similar to the tiny tea bags used on the dining table, are now possible with the use of snow-white, inexpensive, woven viscose rayon fabric which is unaffected by the coffee and adds no flavor or odor to the beverage.

These bags are for use by coffee packers and will come in packages from the grocer. They will come in four-cup, six-cup and ten-cup sizes. They are designed particularly for use in the familiar vacuum type coffee brewer but can be thrown into the old-fashioned pot in which boiled coffee is made, or can be used in the percolator if a special splash plate is put over the percolator basket.

When used in a vacuum coffee maker a "hold-down" to keep the bag in position is necessary. In the all-glass type a small perforated metal disk with an elongated pin projecting downward does the job. The pin is punched through the center of the bag and attached to a spring-chain that hangs down the neck.

One appeal these coffee bags will have for the housewife is the lack of "mess" that will come from their use. They are "throw-away" bags after once used. The viscose rayon material holds all the solids of the coffee inside. Only soluble extracts get out. When the coffee is brewed, the bag and the messy grounds inside it are dropped in the trash can.

The discovery that viscose rayon can be used to make a successful coffee bag was by Earle F. Hiscock of Washington, and patents are pending. The bagged coffee will be known as Kip. A company has been formed which is now ready to furnish coffee roasters with bags and advice.

Science News Letter, December 1, 1951

## CHEMISTRY

### Chemical Wipes Out All Living Plants

➤ IF FUTURE wars should justify an attack on the enemy's crops, a new chemical might be scattered over fields to make them useless.

This chemical wipes out all living plants and keeps ground free from vegetation.

The first use of this CMU chemical will be along railroad tracks, in lumber yards, gasoline storage and other areas that need to be kept free of burnable materials.

Developed by Du Pont's research scientists, H. C. Bucha and Dr. C. W. Todd, the new herbicide is chemically 3-(p-chlorophenyl)-1,1-dimethylurea, hence its short name of CMU. It is safe to use, as it is not corrosive and only very slightly toxic to man and animals. It acts through the roots of the plants. About 20 to 100 pounds are used per acre. (See SCIENCE NEWS LETTER, Nov. 17, p. 311).

It is particularly effective on grassy weeds, but it does not have a selective action like 2,4-D which attacks the non-grasses and kills many other plants. It is a total killer. Borax has been used for a similar purpose but larger concentrations are needed.

Science News Letter, December 1, 1951

## INVENTION

### Machine Sews Carpet Strips on the Floor

➤ STRIPS OF carpet on the floor are sewed together with a machine, electrically-operated but pushed along the floor with a long handle. It has a shallow base which passes under the carpet, raising the edges so that they can be joined by fastening devices mounted wholly within the base. Inventors are Merwin F. Ashley, Arlington, and Edward W. Fearing, Quincy, Mass. United Shoe Machinery Corporation, Flemington, N. J., has acquired the patent rights to this carpet-sewing machine.

Science News Letter, December 1, 1951

## CHEMISTRY

### Vitamin-Like Factor Speeds Alcohol Production

➤ DISCOVERY OF a fermentation factor that speeds production of alcohol from sugar was announced by Drs. Bernard Wolnak and Carl S. Miner, Jr., of the Miner Laboratories, Chicago.

The fermentation factor is like a vitamin but is not any of the known vitamins, Drs. Wolnak and Miner said in their report to the American Chemical Society meeting in Chicago.

It is found in dried, activated sludge, a by-product of sewage purification systems, which hitherto has been used only as a fertilizer.

Science News Letter, December 1, 1951

## TECHNOLOGY

### Magnesium Protection for Underground Metal

➤ A COMPLETE system of buried bars of magnesium, to prevent the underground corrosion of structural steel, steel piping and electric lead-sheathed cables, will be installed at the new Fairless Works of United States Steel Corporation in Morrisville, Pa.

These bars of magnesium will provide what scientists call cathodic protection, a widely used method of setting up electric currents to offset the natural currents that cause underground corrosion of metals.

Such corrosion is of common occurrence and does much damage each year by causing the failure of underground cables and piping and weakening steel construction that extends down into the earth.

When dissimilar metals are in electrical contact and are placed in a conductive liquid or in the moist earth a natural current is generated between them and flows from one to the other. This current flows from the metal which by its nature corrodes most to the one that corrodes least. It causes the less stable metal to disintegrate or decay. The action is electrolytic, similar to that in the electroplating process.

Much scientific work has been carried out to find the most effective means of providing cathodic protection. It has been found that magnesium is effective in setting up a current from itself to lead, copper and steel. For that reason the magnesium bars will be used at the Fairless Works. All copper and lead placed underground will be coated with a neoprene jacket.

From time to time it will be necessary to replace the magnesium bars as they are eaten by the currents they set up. Before magnesium was decided upon, engineers of U. S. Steel made extensive test of this metal in samples of water and soil from the site of the plant.

Science News Letter, December 1, 1951