

## Goldenrod Rubber

Thomas Edison has taken steps to protect his scheme for getting rubber out of goldenrod and other small plants by taking out a patent on the process. His new patent just issued, bears the serial number 1,740,079.

The difficulty about getting rubber out of such plants as goldenrod lies in the fact that most of it lies in the pith and in the cortex, or bark-like outer portion of the stem, while the bulky woody inner parts contain little or no rubber, yet clog up the extracting machinery and involve a lot of expensive handling of worthless material. Mr. Edison's process aims to get rid of this part of the stem.

In the process as described in the patent, the dried plants are first crushed between rollers, to open up the pith seams and break the bark. The crushed plants are then cut into pieces one-half inch long and soaked in water.

After this they are put into a water-filled ball mill. A ball mill is a device somewhat like a concrete mixer, which tumbles its contents over and over with a number of hard steel balls. This rapid pounding breaks the bark into small fragments, but shreds the woody part into fibers.

After about an hour in the ball mill the contents are screened, separating the bark fragments from the fibrous inner portions of the stem. This mass can be used in paper making of similar manufactures.

The second stage of the process consists in grinding the separated bark and pith pulp in water and permitting the solid matter to settle in a tank. The rubber particles, being lighter than water, rise to the surface and are floated off.

Mr. Edison claims that this process is commercially practicable for producing rubber from goldenrod and other small herbs and shrubs.

*Chemistry*

*Science News-Letter, February 22, 1930*

## Thousand Island Park

Twenty-eight of the famous Thirty Thousand Islands of the Georgian Bay region, which for many years have offered such an interesting vacationland to citizens of both the United States and Canada, have recently been set aside by the Dominion Government as a national park.

Beausoleil Island is one of the most interesting of those acquired for park purposes. It has an area of 2,712 acres, and in addition to its great scenic beauty is of historic interest. It figured prominently in

the triple battle of St. Louis, which was fought in March, 1649, on the ridge just above the site of the present town of Port McNichol, and Indian refugees from this battle settled there afterwards. Almost two centuries later, on June 5, 1856, the island was surrendered by the Indians to the Crown and was under the jurisdiction of the Canadian Department of Indian Affairs until included in the new park.

*National Parks*

*Science News-Letter, February 22, 1930*

## Large Garages Safe

Little danger of carbon monoxide poisoning was found in multi-story garages in experiments conducted by W. C. Randall and L. W. Leonhard, Detroit engineers. The greatest concentration of the gas found in large garages during many tests is only sufficient to cause attendants to have headaches.

A fast running motor exhausts between one and one and a half cubic feet of carbon monoxide every minute. The concentration in multi-story garages, however, was found never to exceed one and a half parts in 10,000, and this only during rush hours.

Even in cold weather, when ventilation is limited, this type of garage is large enough to hold the excess gas without dangerous concentration, and the movement of cars keeps it stirred up and prevents pocketing, the two engineers reported.

*Physiology*

*Science News-Letter, February 22, 1930*

## Smallest Park Passes

THE smallest member of the U. S. National Park system, Sully's Hill Park in North Dakota, is to have its formal status changed to that of a national game preserve, by a bill introduced in the House by Representative Thomas Hull. The change will be, in effect, simply an official recognition of *de facto* conditions, because the area in question has never been used as a national park and has long been the site of an important game preserve. By transferring it from the Department of the Interior to the Department of Agriculture it is felt that the use for which it is best adapted can be better promoted.

Sully's Hill National Park was created by an act of Congress in 1904. It contains one and one-fifth square miles, fronting on Devil's Lake. Mr. Hull's bill provides for the enlargement of the game preserve by the acquisition of not more

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than 3,000 acres to the east and south of the present area.

Other "pocket-size" parks are Platt National Park in Oklahoma, one and one-third square miles, and Hot Springs National Park in Arkansas, one and one-half square miles. Both of these areas contain many hot springs, and the latter park, which was set aside as a military reservation almost a century ago, has become the center of one of the most famous health resort cities in the world.

*Public Parks*

*Science News-Letter, February 22, 1930*

## Sun Spots

Weather prediction in the future must take into consideration variations in solar radiation, especially those eruptions noted in connection with sun spots, according to William I. Rooney, associate physicist of the Department of Terrestrial Magnetism, Carnegie Institution. Mr. Rooney has just returned on the Grace liner Santa Barbara from the Carnegie Observatory at Huancayo, Peru, 12,000 feet above sea level.

Observations made by him during his two months there are part of a series he is making throughout the world of the resistance of earth materials in order to check measurements of currents flowing through the earth.

"While there is still considerable skepticism among scientists as to the connection between weather and sun spots," Mr. Rooney declared, "I believe that all those who have made a careful study of the available data are now agreed that there is a direct connection."

Mr. Rooney said that his work upon the resistance of earth materials had shown that certain solid substances, such as clay impregnated with magnesium salts, were better conductors of earth currents than sea water, formerly considered one of the best conductors. The resistance of earth materials may vary from 100 ohms to 5,000,000 ohms per cubic centimeter within the same square mile, he said.

This has an important bearing upon geophysical prospecting, he explained, for the variation in conductivity of earth materials enables the physicist to determine the depth of strata without boring or excavation by setting up electrodes in the earth's surface and measuring the resistance between

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them. He said he had determined the depth of surface water to within six inches by this method.

Measurements of the potential gradient of the atmosphere, he said, might vary during the day from 100 volts per meter positive to 50 volts per meter negative electricity. Although the potential is high, he explained, there is very little current flowing so that it is difficult to measure. There is a continual radiation of electricity from the earth taking place, he said, but most of it is not lost. One of the most usual theories for its return is that it flows back in large quantities during thunder storms and in connection with ordinary precipitation.

*Astronomy—Meteorology*  
*Science News-Letter, February 22, 1930*

### Faraday Medal

Sir Ernest Rutherford, the physicist who made alpha rays from radium knock hydrogen out of various light chemical elements, thus accomplishing transmutation, and who has been president of the Royal Society, Great Britain's leading scientific society, since 1925, has been awarded the Faraday medal by the British Institution of Electrical Engineers.

Sir Ernest is a foremost British scientist and has many accomplishments to his credit in different fields. In 1908 he was awarded the Nobel Prize for chemistry. The Faraday medal is given for notable scientific or industrial achievement in electrical engineering or for conspicuous service rendered to the advancement of electrical science, irrespective of the recipient's nationality.

*Physics*  
*Science News-Letter, February 22, 1930*

### Like Flag Colors

The colors of the American flag are the most beautiful in the rainbow in the estimation of Filipino school children. At least, this is true among hundreds of young Filipinos who have advanced in school beyond the third grade and who have begun to absorb ideals of patriotism.

The views of more than 1,000 Filipino children as to the order of their color preferences have been obtained by two psychologists, Dr. Thomas R. Garth and Isidoro R. Collado, of the University of Denver. Reporting their experiment in the *Journal of Comparative Psychology*, they say that Filipino children are like Indian children in voting red the most beautiful

of all colors. In a previous experiment with white children, blue won first esteem.

The gay colors of violet, red, and orange fought for high rank in the personal preference of little Filipinos of the first three grades. Blue was not to be compared with these colors for beauty, their choices indicated. White trailed at the end of the list, with yellow just above it. But from the fourth grade on up to high school, the young Filipinos set red, white and blue as the three choicest colors, in varying orders, the psychologist found.

*Psychology*  
*Science News-Letter, February 22, 1930*

### Two 1000-Foot Spans

The War Department has announced approval of plans for the construction of a highway bridge across San Francisco Bay to contain two cantilever spans, each 1,000 feet long. One span will allow a vertical clearance of 200 feet and the other 175 feet above navigable water.

The bridge will join the city of Richmond and Marin county. It will be 17,769 feet long, nearly three and a half miles, including the approaches, and will contain 19 deck spans besides the long cantilever clearances.

While the length of span of this bridge has been exceeded in other structures, it is unusual to have two such long links in the same bridge.

*Engineering*  
*Science News-Letter, February 22, 1930*

### Making Snow

Real snow is plentiful in many parts of the country at this time of year, but in order to provide meteorologists with it at any time an apparatus for producing synthetic snow has been perfected by Dr. John Mead Adams, associate professor of physics, at the University of California at Los Angeles.

The apparatus used consists of a little glass tube, surrounded by bottles of gurgling water, a thermos jug, long coils of wire and rubber tubing, a cooling apparatus, and a resistance instrument.

As the snow crystals are formed, they drift down upon a black cloth, properly cooled to preserve them for a sufficient time for a microscopic study, and for photographing.

Dr. Adams believes that snow crystals are built up from smaller crystals through the action of kinetic or electrical energy, though as yet he has discovered no definite proof of this during his experiments.

*Physics*  
*Science News-Letter, February 22, 1930*

### Psychiatric Service

A psychiatric service to assist the judge in determining the sentence of all convicted offenders is recommended in a resolution just published by the committee on psychiatric jurisprudence of the American Bar Association.

This committee of lawyers has come to the conclusion that such a psychiatric service should be required by law in every case where the judge has any discretion as to length or type of sentence. It should also be possible for the judge to call for the advice of court psychiatrists in any other case where he thinks it advisable.

"We further recommend," the report states, "that a psychiatric service be available to every penal and correctional institution, that there be a further psychiatric report on every prisoner convicted of a felony prior to his release, and that there be established in each state a complete system of administrative transfer and parole, and that there be no decision for or against any parole or any transfer from one institution to another without a psychiatric report."

The chairman of the committee, Prof. Rollin M. Perkins of the University of Iowa Law School, in commenting on the report to Science Service said:

"It represents a very preliminary step in the effort to make a more scientific approach to problems of social discipline involving mental disease or mental defect. The hope is to do away, as far as possible, with the battle of experts in the courtroom and to permit the mental expert to assist the law in the laboratory or clinic where he can work to best advantage."

*Psychiatry—Jurisprudence*  
*Science News-Letter, February 22, 1930*

### Ice Age Turkeys

Turkey-like birds once nested in the region now occupied by the city of Los Angeles, California. This fact has been brought to light in the course of a review of the Ice Age birds of Rancho La Brea tar pits in the collections of the Los Angeles Museum. The review was undertaken by Dr. Hildegarde Howard of the Museum for the purpose of establishing a census of the birds of the region. It was found that of about 500 individuals of the extinct, turkey-like bird, *Parapavo*, represented in these collections, more than 150 were young birds, many of them only chicks.

*Paleontology*  
*Science News-Letter, February 22, 1930*