

# IN RADIUM FACTORY

INTRICATE PROCESS OF MAKING PRECIOUS ELEMENT.

Tons of Ores Treated for Two and Half Months in Large Sifting Tanks to Obtain Minimal Fragments of Salts.

London.—Physical theories have, in the course of the last few years, undergone something like a revolution, due to the discovery of radiations, given out from certain substances, which radiations, although invisible to the eye, manifest themselves by the most varied effects. The typical representative of these substances is radium, or rather its chemical compounds, as the element itself has not yet been isolated. Owing to the scientific interest attaching to this wonderful substance, and the practical uses it is liable to be put to, especially in medicine, it will not be amiss briefly to record the complicated processes required in its manufacture.

Apart from their being some of the most interesting substances known to men, radium salts are the most precious of all chemical compounds, one kilogram of radium bromide being estimated at about \$80,000,000. Owing to this extreme costliness, it will be understood that the amount of radium generally handled in laboratories must be rather minute; and, as the effects of radium are of extraordinary intensity, those small quantities are quite sufficient to show any phenomenon hitherto discovered.

In order, however, to give an idea of the enormous amount of material required to produce, even such minute quantities as a few milligrams of radium salts, it may be said that whole



Sifting Tanks in a Radium Factory.

wagon-loads of diverse ores have to be submitted to a lengthy treatment in order to extract from them some minimal fragments. By discontinuing the various operations at a given stage the activity of the radium salt can be varied at will, according to the special purpose it is intended for, and a whole scale of different intensities can thus be readily produced.

At a special radium factory recently installed at Nogent-sur-Marne, the most varied ores are treated, and on their arrival are all taken to the crushers, whereas their further treatment varies according to the kind of material. The method described in the following applies more particularly to pitchblend, or rather to pitchblend residues as obtained in the manufacture of uranium—which are the most important of radium-bearing materials. The "gross treatment" is carried out in wooden tanks and cast-iron tanks provided with stirring devices. Each ton of residue will require five tons of chemicals and 50 tons of rinsing water.

As radium sulphate always remains at the bottom of the vessel, it is found there at the conclusion of the different operations (lasting about two and a half months), when one or two kilograms of impure radium bromide will be obtained from each ton of residue. The activity of this radium-bearing salt hardly exceeds 50 to 60. Products of higher activity are obtained by "fractionating"—namely, by submitting the mixture of salts to a series of successive crystallizations in pure water, and in water containing some hydrobromic acid.

While the first fractional operations are still carried out on a commercial basis, the more minute operations required to treat the products of higher activity are necessarily performed in the laboratory of skilled chemists. At the end of this difficult treatment only one to two milligrams of bromide are found to remain from each ton of original residues, but this minimal amount shows an activity 2,000,000 times higher than metallic uranium. The most important part of the factory is the laboratory, where chemical analyses and spectroscopic tests are carried out, in addition to measuring the activity of each product, as well as of the emanations they are liable to produce.

## RAPID RISE OF GEN. BARRY.

Career of Army Officer Recently Named for Promotion.

Washington.—The rise of Brig.-Gen. Thomas H. Barry, recently nominated as major-general, vice Gen. C. B. Hall, retired for age, has been rapid. Born in New York in October, 1855, he was graduated from the Military academy in June, 1877. After three years' service in the cavalry and 17 years in the infantry he was transferred to the adjutant-general's department with the rank of major in January, 1897, and became colonel in that department in



Gen. Thomas H. Barry.

July, 1902, less than six years ago. As a brigadier general of volunteers he served in the Pekin relief expedition and in the Philippines. For those services he was made a brigadier general in the regular army in August, 1903, and now stands fourth in that grade, his seniors being Gens. Funston, Carter and Bliss, in the order named.

Gen. Barry is now in his fifty-second year, and will not retire until October, 1919. With the exceptions of Gen. Funston, who is his junior by ten years, and Gen. Pershing, who is five years younger, Gen. Barry is the youngest officer of brigade rank in the army.

For several months past Gen. Barry has been in command of the army of Cuban pacification, and it is announced that he will remain on that duty in spite of his promotion.

### GETS IMPORTANT POST.

John R. Wise Appointed Superintendent of Chillicothe Indian School.

Washington.—John R. Wise, for many years a resident of Washington, has been appointed by Secretary Garfield as superintendent of the United States Indian school at Chillicothe, Okla. This is one of the largest and most important Indian schools in the northwest.

Mr. Wise was graduated from the University of Wisconsin in 1888. He entered the government service in Washington in 1891 in the record and pension office. For over 12 years he was employed in the office of the commissioner of Indian affairs. He was designated by the secretary of the interior in 1898 as manager of the United States Indian congress held in connection with the trans-Mississippi



JOHN R. WISE

exposition at Omaha. For the last three and a half years Mr. Wise has served as assistant superintendent of the Carlisle Indian school.

**Success Attainment of Ambition.** Success is the attainment of laudable desires, and the successful man is he who faithfully performs his duty towards himself and all the world besides, and by doing so confers happiness upon himself in the knowledge that he is fulfilling his divine mission here in the hope of an eternal reward hereafter.

**Her Good Work Recognized.** Mrs. W. S. Peabody of Colorado is called the mother of Mesa Verde National park, because of the interest she has taken in the preservation of the relics of the mysterious cliff dwellers of Colorado.

## HE IS.



She—Is your brother still the same level-headed, sensible fellow he used to be?  
He—Yes, he is still a bachelor.

### If an Advertisement Convinces You, Stay Convinced

When you read in this newspaper the advertisement of a manufacturer who has paid for the space used to convince you that it is to your interest to buy his goods, and you go to a dealer where such articles are usually handled for sale, do not let the dealer or any one of his clerks sell you something else which he claims is "just as good." If an advertisement convinced you, it was because of the element of truth which it contained.

### INSIST ON GETTING WHAT YOU ASK FOR.

**Only Long Sleeves Now.**  
Mistress—Here is a nice dress for you, Martha.  
Maid—Thank ye, ma'am; but I can't take it, really.  
Mistress—You foolish girl, of course you can take it. I insist.  
Maid—No, really, I can't, ma'am. It's got them old-fashioned short sleeves.

### How's This?

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure. F. J. CHENEY & CO., Toledo, O. We, the undersigned, have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligations made by him. WALTER D. KEENE & MARVIN, Wholesale Druggists, Toledo, O. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Testimonials sent free. Price 75 cents per bottle. Sold by all Druggists. Take Hall's Family Pills for constipation.

### Forgiveness.

"The state!" sneered the convicted anarchist. "What do I care for the state?"  
"The state," replied the court, "is not inclined to repay your harshness in kind. It will care for you for a year."—Philadelphia Ledger.

### Important to Mothers.

Examine carefully every bottle of CASTORIA a safe and sure remedy for infants and children, and see that it bears the Signature of *Wm. C. Little* In Use For Over 30 Years. The Kind You Have Always Bought.

### Before Ananias.

Adam had just finished naming the animals.  
"Wait till I start on the fish," he exclaimed, gleefully.  
Thus we learn he was preparing to tell some whoppers even before the fall.

### Ask Your Grocer for "Our-Pie."

If your grocer is one of the few who have not "OUR-PIE" Preparation in stock send his name and 10 cents to D-Zerta Food Co., Rochester, N. Y., and they will mail you a full size, two pie package free. Three kinds, for making delicious lemon, chocolate and custard pies.

### Immense Pig Iron Production.

In the last eight years the three great iron countries have produced 10,300,000 tons of pig iron, of which over half has come out of the United States.

### It Cures While You Walk.

Allen's Foot-Ease is a certain cure for hot, sweating, callous, and swollen, aching feet. Sold by all Druggists. Price 25c. Don't accept any substitute. Trial package FREE. Address Allen S. Olmsted, Le Roy, N. Y.

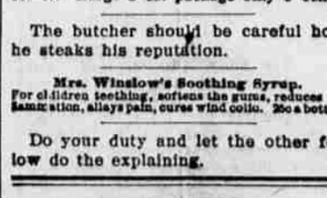
### The theatrical manager has a poor show if it isn't a good one.

**RED CROSS BALL BLUE** Should be in every home. Ask your grocer for it. Large 2 oz. package only 5 cents.

### The butcher should be careful how he steaks his reputation.

**Mrs. Winslow's Soothing Syrup.** For children teething, softens the gums, reduces inflammation, allays pain, cures wind colic. 25c a bottle.

### Do your duty and let the other fellow do the explaining.



**DODD'S KIDNEY PILLS**  
Cures ALL KIDNEY DISEASES  
RHEUMATISM  
BRIGHT'S DISEASE  
DIABETES  
MIGRAINE  
1875 "Guaranteed"

Color more vivid, brighter and faster colors than any other dye. One 10¢ package colors all shirts. They dye in cold water better than any other dye. You can dye any garment without ripping apart. Write for free booklet—how to dye, bleach and fix colors. **MORRIS DRUG CO., Quincy, Illinois.**

## The General Demand

of the Well-Informed of the World has always been for a simple, pleasant and efficient liquid laxative remedy of known value; a laxative which physicians could sanction for family use because its component parts are known to them to be wholesome and truly beneficial in effect, acceptable to the system and gentle, yet prompt, in action.

In supplying that demand with its excellent combination of Syrup of Figs and Elixir of Senna, the California Fig Syrup Co. proceeds along ethical lines and relies on the merits of the laxative for its remarkable success.

That is one of many reasons why Syrup of Figs and Elixir of Senna is given the preference by the Well-Informed. To get its beneficial effects always buy the genuine—manufactured by the California Fig Syrup Co., only, and for sale by all leading druggists. Price fifty cents per bottle.

## SICK HEADACHE

**CARTER'S LITTLE LIVER PILLS.** Positively cured by these Little Pills. They also relieve Distress from Dyspepsia, Indigestion and Too Hearty Eating. A perfect remedy for Dizziness, Nausea, Drowsiness, Bad Taste in the Mouth, Coated Tongue, Pain in the Side, TORPID LIVER. They regulate the Bowels. Purely Vegetable. **SMALL PILL. SMALL DOSE. SMALL PRICE.**

**CARTER'S LITTLE LIVER PILLS.** Genuine Must Bear Fac-Simile Signature. *Wm. Wood* REFUSE SUBSTITUTES.

**\$60,000 Value Given Away** THE RACYLE has 25% less pressure on the crank hanger. It runs and climbs like a feather. It is the largest selling high-grade wheel in the world. Will last a lifetime. We make no cheap Racyles but you can get yours **AT FACTORY PRICES** by securing us **FREE** an agent. See the RACYLE and how to get the \$60,000. MANUFACTURERS OF THE RACYLE, MIDDLETOWN, U. S. A.

**More Money for Wool** Sell your wool where prices are highest. Ship direct and save middle profits. Small lots same price as large lots. Prices and full information free. **MYERS-BOYD COMMISSION CO., St. Louis, Mo.**

## Cauliflower, \$900 an Acre

This is What is Being Done on South Texas Land.

**Dr. Chas. F. Simmons Has Cut Up His Ranch of 95,000 Acres and is Selling Truck and Fruit Farms of From 10 Acres to 640 Acres (Including Two Town Lots) For \$210. Payable \$10 a Month Without Interest.**

The Hon. Joseph Daily, of Chillicothe, Ill., who owns thousands of acres in the Illinois Corn Belt, says: "I am one of the heaviest taxpayers on farm lands in Mason and Tazewell Counties, Illinois, and I have been familiar with the conditions around San Antonio for 12 years. Any thrifty farmer can get rich, and make more money off of this cheap land, acre for acre, than any land in the State of Illinois, that sells from \$150 to \$225 per acre."

Investigate this before the land is all sold. For full particulars and beautiful views of the ranch, write

**DR. CHAS. F. SIMMONS, 215 Alamo Plaza, SAN ANTONIO, TEXAS.**

**WEAR SHIELD BRAND SHOES** *E.K.S. CO. ESTABLISHED 1891*  
Recess School Shoes for boys and girls. Dressy, comfortable—unequaled for real hard wear. Price, \$1.75 to \$2.50. If not at dealers ask us. **ELLET-KENDALL SHOE CO. MFGS. Kansas City, Mo.**

**W.L. DOUGLAS SHOES** \$300 \$350  
SHOES AT ALL PRICES, FOR EVERY MEMBER OF THE FAMILY, MEN, BOYS, WOMEN, MISSES AND CHILDREN.  
W. L. Douglas makes and sells more shoes than any other manufacturer in the world, because they hold their shape, fit better, wear longer, and are of greater value than any other shoes on the market to-day.  
W. L. Douglas \$4 and \$5 Gilt Edge Shoes Cannot Be Equalled At Any Price  
Beware of cheap imitations. W. L. Douglas name and price is stamped on bottom. Take No Substitute. Sold by the best shoe dealers everywhere. Shoes mailed from factory to any part of the world. Illustrated Catalog free to any address. **W. L. DOUGLAS, Brockton, Mass.**

**FOR PINK EYE** DISTEMPER CATARRH FEVER AND ALL NOSE AND THROAT DISEASES  
Cures the sick and acts as a preventive for others. Liquid given on the tongue. Safe for brood mares and all others. Best kidney remedy; 50 cents and \$1.00 a bottle; \$5.00 and \$10.00 the dozen. Sold by all druggists and horse goods houses, or sent express paid, by the manufacturers. **SPOHN MEDICAL CO., Chemists, GOSHEN, INDIANA**

**PILES: NO MONEY TILL CURED**—SEND FOR FREE LITERATURE ON SPECIAL DISCOUNTS, WITH NAMES OF PROMINENT MEN, CURED BY THE TREATMENT. **MORRIS DRUG CO., Quincy, Illinois.**

**PUTNAM FADELESS DYES**

**160 Acre FARMS Western Canada FREE**

## What a Settler Can Secure in WESTERN CANADA

160 Acres Grain-Growing Land FREE. 20 to 40 Bushels Wheat to the Acre. 40 to 80 Bushels Oats to the Acre. 35 to 50 Bushels Barley to the Acre. Timber for Fencing and Buildings FREE. Good Laws with Low Taxation. Splendid Railroad Facilities and Low Rates. Schools and Churches Convenient. Satisfactory Markets for all Productions. Good Climate and Perfect Health. Chances for Profitable Investments.

Some of the choicest grain-producing lands in Saskatchewan and Alberta may now be acquired in these most healthful and prosperous sections under the

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by which entry may be made by proxy (on certain conditions), by the father, mother, son, daughter, brother or sister of intending homesteader. Entry fee in each case is \$10.00. For pamphlet, "Last Best West," particulars as to rates, routes, best time to go and where to locate, apply to

**J. S. CRAWFORD, No. 125 W. Ninth Street, Kansas City, Missouri.**

## Paxtine TOILET ANTISEPTIC

Keeps the breath, teeth, mouth and body antiseptically clean and free from unhealthy germ-life and disagreeable odors, which water, soap and tooth preparations alone cannot do. A germicidal, disinfecting and deodorizing toilet requisite of exceptional excellence and economy. Invaluable for inflamed eyes, throat and nasal and uterine catarrh. At drug and toilet stores, 50 cents, or by mail postpaid. **Large Trial Sample**



WITH "HEALTH AND BEAUTY" BOOK SENT FREE **THE PAXTON TOILET CO., Boston, Mass.**

### DEFIANCE STARCH

16 ounces in the package—other starches only 12 ounces—same price and "DEFIANCE" IS SUPERIOR QUALITY.

**WIDOWS' PENSIONS** under NEW LAW obtained by **JOHN W. MORRIS, Washington, D. C.**

W. N. U., Kansas City, No. 21, 1908.