

SCIENCE TELLS US

by René Bache



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People Flocking to Isle of Pines These Days For Brief Dips Into "Radium Wells"

A MIGHTY profitable piece of property in these days is a radium well—the term referring to water that contains the precious "emanations" of that wonderful mineral.

People are flocking to the Isle of Pines (south of Cuba) for "dips." On that island, at Santa Fe, are four radium wells that are alleged to be very remarkable. Not far away, at Santa Barbara, are eight more.

The wells are not much to look at—mere holes dug in the ground and surrounded by ring fences. There are hotels, which charge only \$5 a day for room and board, with dips thrown in. Outsiders may

have the treatment at \$5 per dip. The method is simple and rather primitive. A piece of canvas is spread on the ground; the patient sits in the middle of it and two muscular men lift the ends. Lowered into the water hole one is immersed for a moment or two only.

More would be too much. The heat might be dangerously affected. Even after so brief a dip the body of a person thus immersed is almost as red as a boiled lobster. It gives one a notion of the strength of the emanations.

Women who take the dips are warned to avoid wetting their heads. The radium water turns the hair green.

Where Are You Safest? Pullman Car Is Good Place, Figures Show

THE average person suffers a disabling accident once in seven years. It may be only a smashed thumb or a sprained ankle, but it puts the sufferer temporarily out of business.

If one would avoid disabling accidents, the safest place is indoors, in bed, in the cellar.

Next to that the safest place is a Pullman car on a railroad train. So say the accident insurance companies. A passenger in an ordinary railroad car is much safer than at home, because he is sitting still and few things can happen to him. If he is in a Pullman, and there is a collision, other cars may be smashed, but his own vehicle, being of steel and enormously heavy, will likely escape serious injury.

For all that is said about the perils of the sea, you are about 100 times as safe on a ship as on land. One man in every 2,200 is fatally hurt by an accident on land; on the ocean only one person in 22,000 suffers accidental death.

If there be a safer place than a Pullman car, it is the Boardwalk at Atlantic City. Nothing ever happens on the boardwalk, the municipality sees to that. It is a via sacra—a sacred road of planks. The town

authorities keep a watchful eye upon it day and night. There is never any disorder there; nobody is held up and robbed. In winter, if so much as an inch of snow falls on it, the snow plows appear and remove it. If anybody were to slip up and tumble on the Boardwalk the Jersey resort would deem itself disgraced.

7,000,000 Gallons Water for Pools

THE city of Washington, being chronically threatened with a shortage of water, is somewhat perturbed by the prospect of being obliged to keep filled the great reflecting pool which is to adorn Potomac park, extending from the new-built Lincoln memorial temple toward the Washington monument.

Today, in viewing the excavation being made for the purpose, one is impressed by the vastness of the thing. It is shallow, but of enormous area, having a length of 2,060 feet and a width of 160 feet. This does not take into account a supplementary pool which is 293 by 160 feet.

It was originally intended that the pool should have the form of a gigantic cross, but when we went into the big fight the War and Navy departments erected the two largest buildings in the world in Potomac park, regardless of the fact that they occupied part of the land reserved for the crosspiece of the cross.

Thus it has been necessary to alter the plan, and the reflecting pool will be simply a very much elongated rectangle, supplemented by a smaller one of an irregular oval-shape between the west end of the main pool and the foot of the hill on which the Lincoln memorial stands.

The big pool and the smaller pool will together hold 1,440,000 cubic feet of water, or about 7,000,000 gallons. The water will be only three feet deep, and it will have to be renewed every two weeks, lest it assume the unpleasant appearance of a stagnant pond.

Substitute for Tea

THE active principle of tea is "theine." That of coffee is caffeine. But caffeine and theine are exactly the same thing.

This agreeably stimulating alkaloid is found in other plants, one of which grows wild and plentifully in the South Atlantic States, where it is called "yaupon," or sometimes "Christmas-berry tree."

The Indians brewed a beverage from the leaves of the yaupon long before the first white man landed on this continent; and during the civil war it was used as a substitute for tea by people in the south.

The government plant bureau is experimenting with it, in the belief that the leaves, when properly cured after the manner of tea, will furnish a palatable cup at a much less cost.

Most Enigmatical Figure. The Comte de Pescher is the most enigmatical figure in Europe at this moment.

Is he Austrian, Rumanian, German, Russian or French? He has been about Paris a long while. I have seen his photograph, taken on the steps of a first-class Paris club, but was it taken while the building was a notable Russian restaurant, before the club moved into it? He has friends among the best and enjoys an unblemished reputation.

This is the man, they say, who "financed" a French chemist to make diamonds.

It is a perfectly legitimate enterprise, they say, when the diamonds are real—and little. Moissen made little ones some 30 years ago and his name goes down the roll as a prince of science. Does making big ones change the morality of it? If there be any doubt, says Count Pescher, we will make middle-sized ones! So runs the story, but no one knows to whom he said it.

Influx of Large Stones. As a fact, the influx of fine stones into the current diamond stock of western Europe and America—supposed to have come from bolshevist Russia—consists notably of stones of between 10 and 20 carats, after cutting. Speculative tourists, women out for bargains, local jewelers, war profiteers evading taxes and a long line of varied categories have been picking up such diamonds on the quiet. In Switzerland alone, it is said, more fine stones have been absorbed at bargain prices than all Russia contained in 1914!

The great war made a wonderful period for sales of this character. I remember a little greasy contractor making up men's suits for a Paris tailor. He employed four or five journeymen and "copped" over 5,000 francs a week.

"Are you investing it in war bonds?" he was asked. The man grinned confidentially.

"I buy my wife some diamonds!" he said; "diamonds, always diamonds! You can hide them in a revolution! You can sell them at a profit! And they pay no taxes!"

What Was "Black Dust?" So great has been the capacity of this new public for absorbing dia-

Here's New Life Preserver to Keep the Head Up



They Wear It Around Neck As Rubber Necklace

GIRLS, here is the latest—a rubber necklace! It is not built for beauty, nor even yet for speed and comfort, but it is built for "safety first," and if worn at the proper time and under the proper circumstances may save a human life.

It looks like an overstuffed bologna and is worn around the neck like a celluloid collar. But if you are thrown overboard at sea or knocked down by a combor while enjoying

the surf it would keep you from drowning. At least that is the claim of the inventor, George H. Pallady, of Redondo Beach, Cal. The young ladies shown in the picture gave a demonstration of its "safety-first" properties. They stopped swimming and instead of sinking floated on the surface of the water, "heads up."

Pallady arrived at this invention by resorting to the theory that you don't drown with your feet, but with your head. Keep your head above water at all times and be safe, a good motto

Don't Slouch, Girls; Sit Up If You Would Avoid Spine Curvature and Possess Perfect Back

THE human skeleton in childhood is relatively soft and plastic. Hence, if a boy or girl habitually assumes undesirable attitudes, the bones are liable to become more or less deformed. In schools, nowadays much attention is given to making the pupils sit up straight and hold an erect posture when standing.

A slouching habit in childhood is likely to cause an ungainly stoop in adult life. Leaning sideways over a school desk may make one shoulder higher than the other and produce a permanent deformation of the spine, giving to the latter a lateral curvature. It is due to such causes that so many people one sees on the street have one shoulder perceptibly higher than the other.

Now comes the National League for Prevention of Spinal Curvature with a published statement to the effect that 75 per cent of the school children in this country have "faulty spines."

A defect of this kind is not ordinarily noticed unless it amounts to a deformity. The league offers \$1,000 for the woman who has the most perfect back and \$500 for the child whose back is most correct anatomically.

This business of backs is highly important. It has come to be recognized that, in a general way, people may be divided into two classes, the broad backs and the narrow backs. The broad backs possess more endurance and are less nervous. The narrow backs are mentally quicker, more alert and more imaginative.

In recognition of this, slender girls at Wellesley college are encouraged to take the course in five years, instead of four, to lessen the strain. They cannot stand without undue fatigue work that would not tire the broad-backed young woman. Thus it is seen that broad backs are calculated to best bear both physical and mental burdens.

Some Information About Oils and Fats Important to Health

UNTIL the war came we did not realize how precious and indispensable to human health were oils and fats.

It is interesting in this connection to consider the fact that—barring lard, which is not edible—all of our fats and oils are derived from by-product material.

Take cottonseed, for example, which formerly was thrown away. It

now yields more than 1,000,000,000 pounds of oil annually, which is used in enormous quantities in the manufacture of artificial lard.

Corn oil is a by-product of starch and hominy plants. We produce 160,000,000 pounds of it in a twelve-month.

Tallow, lard and other animal fats are by-products of the packing houses.

Eighty-seven million pounds of peanut oil were produced in this country in 1919 for use in lard substitutes, as a salad oil (equal to a fair quality of olive oil) and in the making of "nut margarine." The high price of butter during the war made nut margarine so popular that the consumption of peanut oil for this purpose rose to 28,000,000 pounds in 1918.

Even Rotten Eggs Worth Money

SOME eggs are better than others, but from the view point of large handlers of the product, there is no such thing as a bad egg. Even rotten eggs are worth money, being sold to tanners for the finishing of leather.

The American hen lays 22,000,000,000 eggs in a year. Relatively few of them reach the consumer in a really fresh condition, as every housewife knows.

Commercially speaking, the big problem is to find a market for eggs of various degrees of staleness. This is accomplished largely through the cold storage houses, which buy up eggs in the summertime and put them away until, having acquired a nice musty flavor, they fetch an extortionate winter price.

Before putting them into cold storage eggs are candled, and those found unfit (to use a polite word) are broken and emptied of their contents, the latter being strained through colanders to break up the yolks. The "liquid egg" thus prepared is frozen hard as a rock in large cans and thousands of tons of it are kept in storage at all seasons for sale mostly to bakers and confectioners. When custards, cakes and pastry are made with this material the cooking dissipates the odor.

In 1920 the production of peanut oil in the United States fell with slackening demand and lower prices, to 13,000,000 pounds or nearly one-seventh that of 1919. Farmers in the south have been accustomed to plant peanuts for their hogs, allowing the animals to gather the crop. They have found, however, that it pays much better to harvest the peanuts, sell them at the oil mill for crushing and take back the residuum of "cake." A ton of cake, ground into meal, is worth more as hog feed than the original peanuts, and it makes much better pork.

New Weather Tests

IN THE great laboratory at Madison, Wis., maintained by the United States forest service for wood-working experiments a special staff has recently been made of the effects of various climatic conditions upon airplane propellers.

In one room, by regulation of warmth and moisture, the climatic conditions of Southern Texas or arid Egypt were reproduced. It was found that propellers subjected to these conditions had a tendency to dry out, flatten and become unbalanced.

In another room the climate of the Amazon valley was imitated. This caused propellers to warp badly.

It was found that a coat of aluminum leaf did best service as a waterproof covering for propellers, which, when thus protected, may be exposed to a high humidity for a long time without warping.

Crocodile Tears

WHY do we speak of "shedding crocodile tears"—the expression referring to hypocritical grief?

Only within recent years have modern naturalists noted the fact (evidently observed by the ancients) that the crocodile really does shed tears. The huge saurian, lying half asleep on a mud bank, may be thinking sad thoughts, but the chances are that its eyes are merely watering.

Has Science Found Way to Make Real Diamonds? Influx of Stones on Market

French Chemist, Jailed For "Making Gems," Now Free—Will He Reveal Secret?

BY STERLING HEILIG.

Paris—"You are master of a splendid but terrible secret," said Sir Julius Wernher to the chemist Lemoine. "That secret must die. Only you and I will have known it, and we shall both forget it the same day. How much do you want for your silence?"

These words, published in the Paris and London papers of January, 1908, were generally credited to the life governor of the De Beers company of London.

The entire Paris jewel trade was in excitement, equally with that of London. Men were already making synthetic rubies and sapphires.

"If they manufacture diamonds," said Andre Falize, "great values will fade away."

"Will the syndicates suppress the secret, if there be one?" he was asked.

"If Lemoine has found the secret, others will find it," answered the great Paris jeweler.

"What, then, is your conclusion?" "Pearls will go up. The oyster keeps its secret!"

Chemist Accused of Swindle. The oyster has not kept its secret. And now diamonds—

It was only a few years ago that Lemoine, the French chemist, was railroaded to jail on a charge of swindling. In Paris, for having "made diamonds" in the presence of experts like Sir Julius Wernher, Lord Armstrong, Oates, head chemist of the De Beers company in London, and Andre Normandin, eminent chemist. Diamonds bubbled, but seemed safe.

Pearls went up when diamonds bubbled; but in the great war these stories were forgotten. All jewels went up—even the influx of blood-stained "bolshevist jewels" from Russia could not saturate the free market. Then the story of Japanese pearl culture broke.

Oyster Gives Up Secret. The oyster gave up its secret. Pearls went tumbling and diamonds promised to go still higher. Lemoine, did his time in jail and

passed out, during the war, into the great world—where he disappeared.

It is said that Lemoine and his new associates are quietly flooding the world with diamonds. This intrusion of fine stones on the official market has been explained by bolshevist loot from the aristocracy of Russia. But Russia never had that many diamonds.

Tricky Almost Impossible. Even while Lemoine was awaiting trial many doubted how he could have "salted" his crucibles or raw material in presence of experts. Lemoine was naked, to prove his good faith. Oates and Wernher handled the empty crucibles, into which they themselves put the "black powder."

They closed the crucibles; emptied them when fired; treated the burnt stuff with Lemoine's acids—and brought out diamonds!

What was the "black powder?" There are refractory clays, rare earths, etc., which, dissolved, might cover small-sized diamonds in a crust, and when submitted to 3,000 degrees centigrade, the crust might flake off and liberate the diamonds without burning them. But would an expert diamond chemist, like Mr. Gates, examining the black powder in his own hands, permit putting it into the crucibles, permit lungs to pass which covered diamonds?

"Doctored" Crucibles. Lord Armstrong insisted that it was impossible to reveal the secret. He drove them to the idea of tricked crucibles with false linings of some such rare earths. Between false lining and true crucible, "salted" diamonds might be concealed and when the false lining burned away the diamonds would be revealed. To vitriol such earths it could be necessary to "astonish" it, as porcelain makers say, by plunging the crucible into water. This Lemoine did, or played big hoes on the crucible. But so did Moissen, to obtain diamonds from black powder. This was the diamond raw material a carbon lining that does not melt, but

monds, it is said, that the official market did not feel it, prices rose and the trust released more stones a month. And yet it is realized today that this "other" sale has existed and this "other" supply continues.

Russia no longer can explain it! What was the "black dust" which Lemoine supplied to Gates?

"Diamonds are cut by polishing them with other diamond surfaces," said Professor Le Chatelier, who took Moissen's place at the Sorbonne. "What falls from the iron wheel? An oily mud, composed of diamond powder placed upon the wheel, diamond powder from the stone which it is polishing, and a lot of iron powder from the wheel itself, mixed with the oils which hold it there, and which also prevent the diamond powders from being breathed by the cutter."

Powder Not Valuable. "This diamond powder is not very valuable," continued the professor. "Was Lemoine's secret here? Really, it may be childishly easy, once you have the turn hand! Moissen

made his tiny diamonds from the same stuff—pure carbon and iron. Into his electric furnace he put iron—containing, naturally, a little pure carbon; and by aid of a sudden cooling of the outside of the mass he imprisoned the carbon. Under the influence of terrific pressure at the center of the little sphere—cold outside, but still white-hot inside—the pure carbon crystallized into tiny diamonds.

"Now, who knows but what Lemoine, employing diamond dust in quantity—much carbon with a little iron—may not have obtained far greater diamonds than did Moissen, who used very little carbon, with much iron?"

Talk Heard Again Today. Such was the talk in 1908. It is heard again today.

It would be necessary to find a way of consuming the oxygen in order not to burn the diamonds produced. Lemoine's raw material, the "black powder," would be comparatively cheap diamond-and-iron dust from the polishing wheels, or diamond dust pulverized from cheap

stones, with iron dust added, and some carburets to save the new-made diamonds from combustion.

It is curious how rumors have hark back to the French chemist, Lemoine, accused by the great men of the De Beers company of cheating them by "hocus-pocus" in the matter of their very speciality of diamonds!

Must Stand Mute. His situation was atrocious. Accused by Sir Julius, he must stand mute. Should he justify himself by making diamonds before the trial experts the bottom would fall out of the trade and he, Lemoine, would lose all the glorious profits of his discovery. What comfort or profit would it be to him that his accusers would lose equally with him? Yet should he refuse or be unable to make diamonds he must go to prison as a trickster—but he would preserve his secret!

As a fact, he went to prison.

And as for the remaining facts, it is too soon to know them as anything more than the queer rumors which I have been trying to set forth.

Sun Sets on the Bootleggers' Day in "Moonshine" Paradise

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taste of the stuff presaged paleness and near death, they say.

"Run it down!" was Chief Dempsey's order to the morals squads.

Day after day, the stuff was being sold. Police surgeons were kept on the run with first aid resuscitations of the victims. Sergeant Murphy's squad sentenced poison in the vicinity of Sixth and Pierce streets. A keen lookout was maintained in the neighborhood.

An officer on watch one morning chanced to see a man step furtively from behind a sheet hanging on a washline. The instant that he pushed aside the sheet, he saw that the man had stepped from a cave. The officer hot-footed to a central station, typed a search warrant that took in practically every semblance of a house or cave near Sixth and Pierce, and led the squad to the scene of action.

Sergeant Murphy and his cohorts stepped behind the washing that had been on the line apparently since bootlegging first started. When they opened the huge door of the cave, they came upon a series of stills that were turning out enough moonshine liquor to

supply Bacchanalian feasts for hundreds.

A test of the stuff proved it was everything but liquor. There have been few calls for a police surgeon in that neighborhood since. That was one of the largest bootlegger raids ever made by police. What happened to the distillers is on record at central police station.

In two years, George Summitt, city detective, has confiscated 276 stills and made more arrests for bootlegging than any other single officer on the department, police records show. Summitt's arrests have been responsible for more than \$100,000 in fines. That was when the game was an enormously thriving "industry."

If bootlegging is really decreasing in Omaha, truly Summitt has aided materially in driving out the evil.

And pity the poor bootlegger. "Neither has he spun nor has he worked—but he will from now on. He isn't getting the price he used to for his goods. Money is tight. The prevalent business depression hit him harder than it did stock raisers. Hence, one of the main reasons for the decrease in bootlegging.

The moonshine artist isn't as popular as he was a year ago. The general public has gotten on to his stuff. They're off of him.

However, the wealthy bootlegger is still hauling in good whiskey, they say. Since four young Omaha men were extradited to Canada not long ago to face charges growing out of liquor-stealing, Canada is not sending much of her four-fifths of a gallon stuff down here through the Dakotas. High-powered cars are trailing bonded liquor from Pittsburgh and other points to Omaha.

But it's coming in!

"Yeah, the stuff is sellin' all right," said one bootlegger disconsolately, "other day, but not like it used to. Ya can't git th' price for it. Th' game's a little on the hammer, but it's 'cause the people haven't got th' money. It'll pick up again."

And after all is said and done, the art of bootlegging is still in a transitory stage. Though some say it has decreased and others that the traffickers are having a hard time of it, one doesn't have to run down Ramocat alley or to the river to get a drink.

Indian Summer

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of penitence. "Hush, Dirck! You mustn't talk so. It isn't true. Not a word of it is true. Now, listen to me."

His hands had involuntarily found hers. This time she did not draw away, but held them in her cool, gentle, firm grip.

"Dirck, through all his self-contempt, realized with a queer little shock that he loved this dear handclasp of hers, even as he loved her. As the shock passed he seemed to have known it always. He clung to the tenderly strong hands and gave heed to the soft voice that was soothing him so marvelously.

"You shan't call yourself old, Dirck! Maida was saying, 'For you're not. You were never more of a boy than you are at this minute. I don't know if I can ever be as heavy as you. But, isn't it isn't a bit like this? If you should take a gay, high-spirited boy of ten and load him down with a hundred-pound suit of armor, he'd still be a boy, wouldn't he? He'd still be just as young as ever and just as fond of play. But armor wouldn't be able to play like other boys because the weight of the armor would hold him back. And the sight of the armor would make the other children afraid to play with him. It—it might even make the crueler children laugh, just a little, to watch his efforts at playing. But he'd still be as young and fun loving as ever."

"But—"

"Dirck," she went on, "you're young. The youngest man I know. You'll always be young. But years of work and of living have guided a heavy armor on you. That armor saves you from being crushed by the hammerblows of the world. But it makes you feel unwieldy and strange when you try to play with children who haven't yet put on their armor. To the rest of us—the dearest and most delightful playmate imaginable. We're still young, Dirck, you and I. And by and by these eminently proper children upstairs will be young, too. But not yet. Not till they've really lived. We'll pick up again."

And after all is said and done, the art of bootlegging is still in a transitory stage. Though some say it has decreased and others that the traffickers are having a hard time of it, one doesn't have to run down Ramocat alley or to the river to get a drink.

But they had them together. I used to look down on the divinely youthful old couple when I was in my teens. I even scolded them once for being so "infantile," as I called it. I remember how they fairly shrieked with laughter when I said that to them. I was quite certain for the moment that Providence had saddled me with a pair of imbecile parents. But they were miles younger than I. For they were young together. Perhaps I don't make it very plain, but—

She paused as his eyes met hers. "You make it so vividly plain, dear girl," he said slowly, after a minute of celestial silence, "so vividly plain that—that you've shown me my only chance of staying young. I do so want to stay young, Maida! Eternally young. And—and I can't do it alone. Won't you keep me young, my sweetheart? Without you I must stay old, forever and ever. Won't—"

"Excuse me, Mr. Moylan" came a primly stilled voice from the hallway. "May I speak to you a moment? Are you in the library?"

Dirck got up with a jump that made his strained muscles cry out in protest. He stamped into the hall. There he confronted a meek and tearful Thetis.

"—I came down to say how very sorry am that I lost my temper a few minutes ago," she began her stilted little set speech, "and that I spoke to you as I did. I—"

"There, there, child!" he interrupted in high good humor, patting her reassuringly on the shoulder. "That's all right. Forget it. And now trot along to bed. You ought to have been asleep half an hour ago. Your mother won't let you come here again if you go traipsing around the house like this when it's after your bedtime. Run along!"

Feling the rest of us—ecstatic he strode back to the library to his waiting fellow juvenile.

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Judge Took Rod for Boys Who Took Cradle's Crutch

Beaumont, Tex., Oct. 29.—Two small boys took a crutch away from little Marguerite Walter, who has only one leg, because they "wanted to see her horse." The judge who tried the case, because of the youth of the offenders, recommended a warning application of the paternal hand where it would do the most good.