

SCIENCE FINDS SUPER X-RAYS

Dr. R. A. Millikan Describes New Discovery to National Academy.

Madison, Wis., Nov. 18.—The success in isolating a ray with energy greater than any other known and with a frequency a thousand times higher than the frequency of the ultra X-ray was related by Prof. R. A. Millikan of the California Institute of Technology at the meeting of the National Academy of Sciences here.

Professor Millikan told of the work that has been done in the study of the new ray with first experiments made by sending up balloons containing electroscopes which showed that the ions increased with altitude. The first studies of this nature were made by German professors before the war and since then Professor Millikan has sent up small balloons with instruments from Kelly aviation field which in general bore out the findings of the German scientists.

Gets Results at Ten Miles. Professor Millikan noted the increase in the number of ions with altitude, one of his recording machines having ascended to a height of ten miles.

In order to sift out the influence of radioactive substances, tests were taken under water, but it was found that the liquid was radioactive and snow watered Lake Muller on Mount Whitney was next taken as the source of experiments. Here it was found that through lowering the instruments to certain depths the hard rays could be eliminated. The same experiments were later tried at Arrowhead lake, 300 miles distant, but also a great height with approximately the same result.

The increase in lakes at high altitudes caused Professor Millikan to conclude that there was something that brought absorption other than radioactive substances.

Sun Has No Effect. Professor Millikan found that there was something coming in from the outside with the action of all radioactive material barred. He found further that ionization was the same at all times of the day and that the sun had no effect on the ionization of the cosmic rays.

The rays are of the 10,000,000-volt variety, Professor Millikan declared, and concluded that they are due to atoms changing over to other atoms. The energy of the ray is that of an electron being captured by a heavy nucleus, he asserted. "The rays are all through space, bombarding the earth from all directions. They are rays of extraordinary absorbing power and come to the earth with equal intensity day and night."

Professor Millikan did not discuss any practical purpose the rays might serve. It has been suggested that this cosmic ray is a counter force to gravitation; perhaps responsible for the initial activity of planetary bodies and that its influence in the universe prevails to prevent the force of gravity from bringing all celestial bodies into one mass.

Grief in Animals

A man or woman who loses some dear one is overcome with deep sorrow, remembering only the admirable qualities of the lost one, but this feeling is soon softened by a multitude of external impressions and influences, so that sorrow gives way to melancholy, which in its turn diminishes.

Not so in the case of many animals. These not only retain their grief much longer, but there are cases in which it lasts as long as life itself.

The cat will swim after her kittens which some cruel man is trying to drown. The story of the dog who starves to death on the grave of his master is no fable. A stone in the Paris dogs' cemetery is thus inscribed: "He was so intelligent that he might have been taken for a human being—but that he was faithful."—Das Neue Illustrierte Magazin, Berlin.

Lighting Scheme

Speaking of modern conveniences and innovations, somebody who helped design the new infants' ward at the Children's hospital, St. Antoine and Farnsworth streets, used his or her imagination. About knee-high above the floor are recesses or slots in the walls fitted with lights. When a nurse enters during the night to tuck the babies in, she doesn't have to turn on the overhead lights and run the chance of waking the tiny patients up. The low wall-lights furnish her soft illumination to do her work without disturbing the babies. Out-of-town visitors have commented more on this little arrangement than on more important features of this great institution.—Detroit Free Press.

Spaniard Gets Credit for the Frankfurter

What is a hot dog? Well, it is most likely spiced, steam-cooked and smoked over hickory smoke. It originated in Bologna, Spain, so long ago that only the main facts may be recalled. They used to slaughter an enormous number of bulls in the arenas of Spain in days when bullfighting was more popular and more brutal than it is now.

It looked like a great economic crime to see so much prize beef wasted. But nobody wanted bull beef just so; bulls are tough and not so delicious as cows and steers are. A butcher in Bologna had an idea and bought bulls that were killed in the bull ring and made the meat into a sausage, mixed with pork and highly seasoned. Bologna sausage appealed to the popular taste. Germans borrowed the formula, put the same sausage mixture into small casings and Bologna became "Frankfurter" in Frankfurt and "Weenie" in Vienna. Coney Island gave it the name of hot dog and popularized it.

One stand in Coney Island that has been selling hot dogs for half a century is reputed to have a sale of five to ten tons of Frankfurters a day in the busy season. Somebody has to sell a lot of 'em to get rid of that 400,000,000 pounds a year.—Colliers' Magazine.

Confidence in Self

Man's Biggest Asset

Life is an island, entirely surrounded by risks, losses, troubles, hardships and misadventures of all sorts. Most men go to pieces when they have had a few beatings. They wilt. They fade away. They crawl into a safe little corner and hide, while the great rough tide of glorious life rushes past them.

The fact is that defeat is the normal thing in this haphazard little world, and victory comes but seldom. Every victory, usually, is the result of a long series of defeats.

A man must have faith in himself and in what he is trying to do. He must say: "I can." He must back himself to win. He must bet on himself. He must have faith in the people he works with. He must believe in his team. He must see the better side of his co-workers and not think that his own point of view is the only right one.

He must have faith in those great principles that make us superior to the animals of the forest—to Truth, Honesty, Sympathy, Justice, Progress.—Forbes Magazine.

Duchess of Fontanges

Marie Angélique, duchess of Fontanges, was the successor to Mme. Montespan in the favor of Louis XIV. "She was beautiful as an angel, but silly as a goose," said Abbe Choiseul of her. She, nevertheless, captivated the affections of Louis XIV, who was tired of Mme. de Montespan.

As soon as she had discovered the passion she had inspired in the king, she became haughty and extravagant, spending at times as much as 100,000 crowns a month. She became the general dispenser of the king's favors and the model of fashion. She was made a duchess by the king, but did not long enjoy the rank, since she died at the age of twenty, in the abbey of Port Royal, at Paris.—Chicago Journal.

Only One Wood for Spools

In almost the entire world, with its great variety of wood to select from, there is only one kind that is used for spools—the ordinary spools on which sewing thread is wound, writes Charles N. Lurie in St. Nicholas. By far the greatest part of the world's spools are turned from the wood of the white birch tree. It grows in many sections of the United States, but especially well in Maine. Virtually the whole world's supply comes from the great north woods. Some of the spools are made in Maine, but a very large part of the wood is shipped elsewhere for spool-making, after being seasoned where it grows.

Where God Is

Eddie, age four, is a veritable question mark. After attending Sunday school he was at home, seated on the floor playing with his sister, Virginia. He looked up suddenly and asked: "Mamma, where is God?" "God is everywhere," I answered. Eddie held out his hand about twice inches above the floor. "Is God here, mamma?" he questioned. I replied in the affirmative. Then again from Eddie, still holding out his hand, "Come here, Virginia, and put your hand on God."

Those Dear Girls

"Madge—Beauty is but skin deep, you know. Marie—Then don't despair, dear, yours may come to the surface in course of time.

Residents of English

Town "Cultivate" Cats

The old nursery rhyme about the cats of St. Ives is based on a solid foundation, for St. Ives, England, is the cat kingdom, as is evident to any visitor. Cats are encouraged to the limit. By an old resident it is thus explained:

"This is a very old town—500 years some of the houses, leastways their cellars, and parts of the foundation are. Now, we keep our fishing gear in the cellars, and there is a terrible lot of rats and mice about in an old place like this. Well, the rats, and the mice, too, would eat the nets; they'd eat us out of house and home if it were not for the cats.

"A characteristic of the cats of St. Ives is that they do a little fishing for themselves. These sleek, well-fed and exceptionally friendly animals delight in a romp over the sand and in dodging the waves. Afterward they will watch for hours by some shallow pool for some unsuspecting fish or small crab which ventures from its retreat from a bunch of seaweed or a rock."—Chicago Journal.

Common Word "Fiasco"

Borrowed From Italy

The word "fiasco" has become current coin in English speech, though it is doubtful if many who use it know that it is an Italian word meaning bottle. Several accounts have been given of why an immediate failure is called a bottle. A correspondent of "Notes and Queries" wrote in 1863: "Some years since, Signor V. Pistrucchi, professor of Italian at King's college, gave me the following derivation. A gentleman visiting an Italian glass manufacturer was struck with the apparent simplicity of the work, so he asked permission to try his hand at glass-blowing, but found the operation more difficult than it looked and the only thing he was able to produce was the common flask (fiasco). The amused workmen crowded around him, and greeted each successive failure with laughter and the cry of 'Altro fiasco! altro fiasco!' (Another fiasco.)—Exchange.

"According to Hoyle"

The expression "according to Hoyle" refers to Edmond Hoyle, a writer on games, who was born in England in 1672. Little is known about Hoyle's life. Tradition says he was educated for the bar. At any rate, he went to London, where he spent much of his time writing on games and giving lessons in card playing, especially whist. He published a book in which he systematized the laws and rules of whist, a game on which he was considered an authority. His name became proverbial as an authority on games.

Playing a game "according to Hoyle" came to mean playing it fair and according to the recognized rules. Hoyle died in London in 1769.—Kansas City Star.

It Makes a Difference

Your success in life depends on your motive. There is an old fable about a dog that boasted of his ability as a runner. One day he gave chase to a rabbit but failed to catch it. The other dogs ridiculed him on account of his previous boasting. His reply was, "You must remember that the rabbit was running for his life, while I was only running for my dinner."

The incentive is all-important. If you are in the race merely for your dinner you will not put the same vim and energy into your running as you will if your ambition is deeper and more serious. Get the right motive and your chance of success will be much greater.—Boston Transcript.

Present and Absent

A curious instance of Israel Zangwill's absent-mindedness came to my notice the other day. He was rehearsing one of his plays at the Scala, and arrived punctual to the minute on the stage. Taking up his position he opened the prompt copy and addressed an empty stage as follows: "I am here to the minute. Why is it that no member of my company can be as punctual?" At that moment his stage manager, who had been searching for him, put in an appearance, and gently reminded him that the rehearsal was in the foyer, where the entire company was already waiting for him.—London Mail.

Early Rising Duke

The duke of Wellington was a very early riser. His early habit of punctuality is pleasantly illustrated in the following anecdote: "I will take care to be present at five tomorrow morning," said the engineer of New London bridge, in acceptance of the duke's request that he would meet him at that hour. "Say a quarter before five," replied the duke, with a quiet smile. "I owe all I have achieved to being ready a quarter of an hour before it was deemed necessary to be so, and I learned that lesson when I was a boy."

TO OPEN FAM'D HOOSIER

COMMUNITY TO TOURISTS

Location of Settlement in Wabash Valley With Interesting History to End.

New Harmony, Ind.—This little community, which first offered to America equal political rights for women, universal elementary education, prohibition of liquor, and other reforms then regarded as communistic, is to be made accessible to tourists after a century of isolation.

Here Thomas Say, zoologist; John Audubon, ornithologist; John Chapple-Smith, engraver, and Gerard Troost, geologist, began the works which later brought them fame.

Huddled in the Wabash valley in the far southwestern "toe" of Indiana, New Harmony has kept to itself its interesting history, except when those who knew the way here penetrated the hills which hide it from the main highways.

It was in 1815 that George Rapp brought hither from Pennsylvania a group of German followers to establish in the wilderness a colony which they named "Harmonie." All the 800 settlers lived a life of strict self-denial, shared equally in property, and received the necessities of life from a community depot. The stone buildings they erected are still in use, and on an outer wall of what was a Rappist storeroom survives an old sun dial at which the peasants assembled a century ago to march to the fields.

After the Rappists had cultivated 5,000 of their 30,000 acres and built cotton, woolen and flour mills, they sold the entire colony, in 1824, to Robert Owen, wealthy Scotch philanthropist and social worker. Recruiting his settlers in Scotland, Owen brought many leaders in science and education. But the experiment failed.

Equal political rights for women were demanded first by Francis Wright in a speech at New Harmony, as it was rechristened by the Owens regime. It was the first community to declare for abolition of alcoholic liquors. It was an early center of slavery abolition. Universal elementary education at public expense without regard to sex or sect was first proclaimed here, and in later years the community introduced to the Middle West compulsory education, its middle being the foundation of the Indiana compulsory education system later patterned after throughout the West. The first club exclusively for women was formed here.

Today the village contains a scant thousand persons.

Poe's Grave Becoming

Shrine of U. S. Pilgrims

Baltimore, Md.—The grave of Edgar Allan Poe in Westminster churchyard here is rapidly coming to be a national shrine. For years it was unheralded and virtually unknown even within the confines of the city. Now pilgrims visit it from all parts of the United States.

Until 1911 a tall unsightly brick wall screened the grave from view of passersby, discouraging the stranger from tarrying there in the forlorn hope of peering within. Now there is a bronze gate ajar so that travelers may step inside and see the final resting place of the great American poet and story writer.

The grave for years had been unkempt, except for what passing care the children attending Edgar Allan Poe grammar school across the way were able to give to it, after scurrying over the brick wall. Peppercorn grew unchecked. The grave itself was overgrown with weeds. The entire graveyard, abandoned, was in a sorry state. The gate was locked and those who went to the shrine were obliged to peer through the bronze grillwork.

Agitation grew over the neglect of the place, and especially of the Poe plot. At last the Press club of Baltimore obtained permission from the Presbyterian committee of Baltimore, which owns the graveyard, to take over the care of the poet's mound. That was in March of this year.

Now a mantle of green overspreads the grave. The hedge around it is trimmed and the paths gravelled. The small iron picket fence surrounding the plot has a coat of paint, and an air of respectability pervades the place.

The Warning One

On the plains of the West thousands of cattle may be seen grazing as one. They move slowly, feeding as they go, their heads pointing in the same direction. Occasionally among the hundreds there will be one individual that ignores the custom of the others and feeds where it will. The cattlemen have learned through experience to look to such an animal for the salvation of the rest in times of emergency. When wild creatures attack or sudden storms break, the solitary feeder is one to give warning or lead the herd to safety.—Cornelia James Cannon in the Atlantic Monthly.

Hunters Care Little

for Gnu's Feroacity

The gnu, with the head of a horse, the long, narrow face, the body of a horse, an antelope's legs, an upstanding mane and a sawing tail that reaches to the ground, is indeed a fantastic creature, writes Lillian Glub, F. Z. S.

His terrible voice, his pose—everything about him suggests ferocity. But though savage in captivity, he is extremely nervous, with a great regard for his own safety.

A herd of these gnus on the veldt is an alarming sight. Frantic and wheeling, and tossing their heads, they approach a strange object in single file, forming themselves into a solid square as they come near.

In this position they will stand for hours, glaring at a tent set up on the plains, as though ready to tear it to pieces.

But this is a game of bluff. Let the owner of the tent show himself with a gun, and though they may gambol wildly around him, uttering loud snorts, it will be in ever-widening circles. The first shot sends them flying, and so great is their speed that they vanish within a few seconds.

Bird's Mother Love

Example of Heronism

The boy who "stood on the burning deck, whence all but he had fled," has won the immortality of a well-known poem, but probably a certain skylark will not find her poet, although she certainly deserves one.

While beating out a field fire at Fetham, in Middlesex, firemen noticed a skylark sitting on her nest on the ground, in the direct path of the flames. The bird continued to sit on her eggs with dense smoke rolling round her, and even when the flames caught the grass of which the nest was constructed she did not stir until the firemen were close upon her.

So struck were the men with the bird's heroism and devotion that they determined to save her home at all costs. They set about isolating the nest, and were so successful that, although the fire spread all around, the nest was scarcely damaged and the eggs remained intact.—London Times.

Hen Lays 280 Eggs at

\$4.75 Profit in 341 Days

Springfield, Ill.—Laying a total of 280 eggs in 341 days, a White Leghorn hen owned by H. B. Hammer, Weaver, Iowa, won the state silver trophy for the highest score at the Illinois state contests at Kankakee, Quincy and Murphaboro.

A. D. Smith, chief poultryman of the division of poultry husbandry, said the bird consumed but \$2.25 worth of feed. Taking the average price of eggs, Mr. Smith said, to be 35 cents per dozen, she produced \$7.10 worth of eggs, showing a net profit of \$4.75.

"The record pen of five hens that won a second cup for their owner, H. B. Hammer, produced the amazing total of 1,280 eggs, an average of 256 eggs per hen, during the 12-month period, Mr. Smith said. A total of 84,411 eggs were laid by the 574 birds in the contest making an average of 147 eggs for each bird, or more than twice the number produced by the average farm-yard hen, according to accepted estimates of 70 eggs per year. Another exceptionally high record for the contest is seen in the fact that 90 birds produced 200 eggs or more each, during the 305 days of the contest."

Chimpanzees Solve Tests

When Some Children Fail

New Haven, Conn.—Chimpanzees can readily solve some problems which are difficult for intelligent children of corresponding maturity, according to scientific tests being conducted at Yale university. Announcement of these tests was made by Robert M. Yerkes, professor of psychology at the institute of psychology.

"Many of the tests are negative," Doctor Yerkes said, "but we get some positive results. It is often surprising to see that children, when confronted with some of the problems, bright children, too, will fail to solve them."

Some Thrill

Prague.—A government flyer has had an unwonted thrill. Attacked suddenly up in the air by an insane passenger, he fought with one hand and with the other guided the plane safely to earth.

Begging the Question

Begging the question is assuming a proposition which, in reality, involves the conclusion. Thus, to say that parallel lines will never meet because they are parallel, is simply to assume as a fact the very thing that you profess to prove. A "circle" in logic is a vicious form of argument in which the conclusion is assumed to prove the premise, and then the premise to prove the conclusion.

French Literary Men

Dispute Over Unicorn

Was there ever such an animal as the unicorn? Its existence has been testified to by no less authoritative writers than Aristotle and Pliny, and even in 1877 the members of the French academy, including the distinguished names of Renan and Victor Hugo, were so doubtful on the subject that in their dictionary they gave the ambiguous definition that, according to the most general opinion, the unicorn never existed. But the present members of the academy, still at work on the new edition of the famous dictionary, have tried to settle the question for once and all. The unicorn, say the immortals, is a fabulous animal of antiquity.

The French press refuses to accept the dictum as final. Why, queries Andre Billy, a well-known writer, should the members of the academy, counting not a single naturalist in their ranks, be allowed to settle the question? And, in the century of radium and the wireless, why should we deny the testimony of Pliny and Aristotle on the existence of a beast remarkable only in that it had a horn on its forehead?—Paris Letter.

Human Remnants Not

Unknown to History

The first case of a human remnant reported in a scientific journal was that of Robert Gill, a cobbler of Dorestshire, whose death was reported in the British Annual Register under date of October 1, 1797.

In ancient times and in the Middle Ages men who chewed the cud were apparently very far from rare, but modern science would be prone to dismiss such tales were they not supported by evidence of more recent time. Roger Gill died after suffering "great tortures" due to the loss of his strange faculty.

Gill usually began his second chewing a quarter or half an hour, sometimes later, after dinner, when every morsel came up successively sweeter and sweeter to the taste. The chewing continued about an hour or more, and sometimes would leave him for a little while, "in which case he would be sick at his stomach." Many other and later instances might be cited of men who have been "biting on the cud" in the possession of this faculty.—Chicago Journal.

Plow as Wedding Guest

The recent appearance of tractors has created great excitement in isolated villages of Turkestan, Central Asia. The mullahs, or priests, are strongly opposed to the invention, which they call "shaitan's coach," or "the devil's plow," and they utter dark prophecies of crop failures and other disasters that will follow its use; but the Turkestan peasants take kindly to the tractor after they realize its superiority over their primitive wooden, ox-drawn plow.

One case is reported in which a Turkestan peasant insisted that the tractor should be present at his marriage, as a sort of honored guest.

Snake Fares Well in Japan

While laborers were at work in the grounds of the imperial palace in Tokyo, they came across a live snake, so large that they first believed it was a log and started to move it. The reptile came to life and the workmen scattered. However, they could have done nothing anyway, as the court officials ordered that the crawler be needlessly disturbed and they emphatically declared there would be no snake hunt. The snake, Japanese believe, is the spirit of the ancient fortress that was once on the site where it was found, and if let alone will harm no one.

The Navajo

The leading tribe of the southern division of the Athapaskan stock of North American Indians was the Navajo or Tennesi, which was the name used by themselves. Since first known they have occupied the land on and south of the San Juan river, in northern New Mexico and Arizona, and extending into the states of Colorado and Utah. They were surrounded on all sides by the cognate Apache tribes, except on the north, where they met the tribes of the Schoshonean family. At present the Navajo are on the reservation bearing their name in Utah, New Mexico and Arizona.

New Egg-Drying Process

Chemical advance has now developed a process, already in commercial use, whereby large numbers of eggs can be kept for indefinite periods without the use of cold storage or preservatives, and which, it is said, will have a material effect upon the seasonal egg markets of the country. The new process produces perfectly dried eggs in the form of a powder. They will keep indefinitely and can be used for almost any form of cooking.

WAGES HIGHER THAN '20 BOOM

Meantime Unit Cost of Production Recedes as Earnings Rise.

New York.—A broad and distinct tendency toward rising "real" wages, that is, wages measured in terms of what the worker can buy with his earnings, is traced by the national industrial conference board, New York, in a comparative study of representative industries.

Increased application of power, better utilization of labor, mechanical ingenuity and managerial efficiency, according to the board, are steadily tending to reduce unit cost of production, thereby cheapening the general cost of living with resulting increasing prosperity for all.

While this tendency is not equally noticeable in all industries the differences in wage levels and cost of production are attributable largely to the different degree of efficiency of production prevailing in the respective industries, the board points out in comparing conditions in major industrial branches.

Iron, Steel Good Examples.

The iron and steel industry, according to the analysis, is a striking example of what progressive modernized methods can do. While wage levels in the iron and steel industry are now about 140 per cent above the pre-war level, according to the study, the average price of its products at present is only about 84 per cent higher than in 1914. In other words, while wages of iron and steel workers are nearly two and a half times as big as they were before the war, average prices of iron and steel products have risen only about a third.

Another notable illustration of this tendency of declining costs, benefiting the wage earner within the industry as well as the consumer at large, is the automobile industry, where wage levels now are about 122 per cent higher or more than double of what they were before the war, while average prices of automobiles are actually 29 per cent lower than in 1914, an instance signally reflecting the improvement of industrial processes.

Similar conditions are found to obtain in the chemical, foundry and machine shop, the rubber, furniture, leather and other industries. The same is also true of the public utilities generating gas and electricity, where wages are more than double of what they were in 1914 (116 per cent higher) while the cost of gas and electricity for domestic consumption, as estimated by the conference board, averages only 40 per cent higher than the 1914 level. The figure here used, the board points out, is for gas and electricity combined, and deals with national averages only, and therefore, does not apply necessarily to any one locality or to either gas or electricity alone.

Survey of Twenty-five Years.

The important role played by administrative and technical progress in lowering the unit cost of production is graphically illustrated in a separate study by the board of the volume of production as compared with the application of power and number of wage-earners during the last quarter of a century. The total volume of production from 1890 to 1923, according to this study, increased 185 per cent, "installed primary power" 230 per cent, while the number of wage-earners during the same period increased only 90 per cent.

Since 1914, however, the board points out, both the application of power and the number of wage-earners have increased less than the volume of production, conclusively showing the advance in efficiency of management in utilizing both machinery and labor.

The concrete result of this increased efficiency, the board study declares, is reflected in the fact that while the American workman today, as we measure the purchasing value of his earnings in terms of the same standard of living as prevailed in 1914, but discount the rise in retail prices, is 24 per cent better off than he was at the beginning of the war (in July, 1914) and 5 per cent better off than he was at the peak of wage earnings during the inflation period of 1920.

Unkind

One day, at the table of the late Mr. Pease (dean of Ely), just as the cloth was being removed, the subject of discourse happened to be that of an extraordinary mortality amongst lawyers. "We have lost," said a gentleman, "not less than six eminent barristers in as many months." The dean, who was quite deaf, rose as his friend finished his remarks, and gave the company grace: "For this and every other mercy, the Lord's holy name be praised."—London Illustrated.