

# VIVISECTION

# ELECTRICITY

# THE TOURISTS

## Liquid Helium Reduces Resistance of Metals to the Electric Current

Noted German Professor Makes Discovery That May Result Eventually in a Substantial Reduction in the Cost of Electricity for Every Day Use.

**LONDON, July 25.** PROFESSOR KAMERLINGH ONNES, of Leyden University, has discovered a method by which the resistance of various metals to the passage of electric current through them may be reduced to the vanishing point, and apparently abolished.

Professor Onnes found that mercury subjected to a temperature of 4.19 degrees centigrade, or tin to one of 3.8 degrees, or lead to a temperature of 6 degrees, would offer no resistance to the passage of electric current, and would become superconductive.

The professor then wound a thousand turns of very fine lead wire on a bobbin. At an ordinary temperature the wire offered a resistance of 736 ohms, but when plunged into a bath of liquid helium it offered none at all, and the current introduced into the wire by induction persisted for many hours without the least perceptible diminution.

It is expected that the discovery will open a new path of research into the constitution of matter.

Details of Professor Onnes' experiment were laid before Professor Howes, of the South Kensington Royal College of Science.

"It has been known for some time," said this authority, "that the resistance of a metallic wire to electric current decreases when the temperature of the wire is reduced. The colder you make your wire the more easily the current passes through it.

"It was known that this reduction in resistance went on continuously with the reduction in temperature, and it looked as if, in order to abolish resistance, we should have to reduce the temperature of the wire to absolute zero, which is 273 degrees centigrade below freezing point. How cold this is may be imagined from the fact that boiling point is 100 degrees centigrade above freezing point. That seemed to be an unattainable ideal.

"Professor Onnes has, however, succeeded in reaching temperatures lower than have ever been reached before.

"It will be noticed that he obtained this extraordinarily low temperature by the use of liquid helium, which he was the first to produce. He spent an enormous amount of money in producing liquid helium, and there was great joy among

scientific persons when he produced a few spots. He must now have found how to secure it in larger measure, but its production in such quantities must still be very expensive, since the gas from which it is procured is very rare.

"The discovery of a method of abolishing resistance to electricity does not lead us toward the electric storage battery, but it suggests the possibility of a reduction in the cost of electricity.

"If you can abolish resistance you abolish the heat caused by resistance, and therefore you could use a very thin wire for a very high voltage. The cost of electrical wiring would thus be reduced very considerably. But in order to do this you must first bed your wires in liquid helium, or find some other way of reducing the temperature of the wire to nearly zero."

Sir Oliver Lodge, interviewed at Birmingham, said Professor Onnes was one of the best experimenters on the Continent, and to all of his assertions great weight was attached.

"The discovery he announces," continued Sir Oliver, "does not take us altogether by surprise, because many experimenters have found that as temperature goes down conductivity improves to a surprising extent.

"So much has been known from the researches of many observers, but Onnes has gone further, and by utilizing the lowest temperature at present known—that of liquid helium in a vacuum—he has reached a conductivity far lower than anything previously known.

"It appears probable that lead does, as he says, offer hardly any resistance to the electric current. One consequence of that is that the current can go on circulating in accordance with the first law of motion like a railway train without friction and without any propelling power—not for ever, of course, but for a long time.

"What the practical bearing of this discovery will be it would be premature to guess. It may effect something in regard to the perfect transmission of wire, although in what way a wire can be kept at so low a temperature in practical circumstances I do not see.

"But whether it has practical applications or not, it is a discovery of very considerable magnitude. It will throw a good deal of light on electricity and matter, and cannot fail to be a revelation of the utmost importance."

## CHARMING FIGURE AT MIDNIGHT BALL



The present Duke of Sutherland succeeded to the title last year. In the year before that he married Lady Eileen Gwladys Butler, who is the elder daughter of the Earl of Lanesborough. The Duchess was a train bearer to Queen Mary at the coronation in 1911. She is one of the most beautiful women in society.

## What the Surgeons Say on Question of Vivisection

Dr. Foveau de Courmelles, of Paris, in an Interesting Article, Shows That It Is Opinion New Methods Should Replace Tortures inflicted on Man's Most Loyal Friend.

CRUELITIES ARE NOT JUSTIFIED, IS HIS VIEW

(Special Dispatch.)

**PARIS, July 25.** THE question of vivisection and the arguments both for and against it are once more being discussed with great earnestness.

What distinguishes the present controversy from former ones is that physiologists are no longer content to treat the question with silence and disdain, but now condescend to discuss it, to state their case, and to declare that vivisection is necessary.

The arguments are the same—The affirmation that without vivisection there can be no physiology, and other aphorisms of the same nature, such as, war and the killing of animals for sport exist and are necessary evils; vivisection is also an unfortunate necessity, but even more useful.

Its opponents, who are so sentimental and whose feelings are so easily affected, would, it is said, do better to put the interests of man above those of animals and to devote their attention first of all to the scourge of war, and to the killing of animals for sport.

These are very unscientific reflections for men of research and erudition, and are merely generalities and side issues.

Practice Is Useless.

Indeed, they entirely lack the clear thought which would be necessary to convince medical men who disapprove of torture, thinking, as they do, that suffering is worse than death, and who have realized the uselessness of vivisection, and even the hindrance it has been to research.

Our friends, the protectors of animals, have also taken their part in the discussion, and it would have been pleasing to find them more scientific in their argument than their adversaries. The contrast afforded would have been amusing and instructive for the general public.

But notwithstanding the many scientifically trained minds formed during the last few years and the spread of scientific knowledge, none of the opponents of vivisection have made use of such arguments.

This has been particularly regrettable, because the supporters of vivisection have scored a momentary triumph. The public has been moved by the descriptions of the horrible tortures suffered by animals, which, for that matter, were old and oft repeated, but it has none the less preserved the idea that such sufferings are necessary.

Tell every mother the world over—the vivisectionists—that the torture of a thousand dogs is necessary to save her child, and it will soon be seen whether a single one of them would hesitate for an instant if the choice were given her!

Vivisection of No Avail.

The defenders of animals describe the heartrending sufferings which are inflicted on the latter, but they do not demonstrate that these tortures are useless. As a consequence, and I have said so for nearly twenty years, they engage in a fruitless task.

What should be shown—and I have already said so in these columns some years ago—is exposed at great length in my book, "La Vivisection, Erreurs et Abus," published in 1911, which M. L. Millevoye, the Deputy, has styled the "Breviary of the anti-vivisectionist." It is that vivisection is useless, and, more important still, this should be irrefutably proved.

My book has not been referred to by point, as I depicted in detail the arguments of the vivisectionists.

When we showed the exact shape of the stomach, obtained in 1898 by a re-plate of the same discovery of Röntgen's, we traced the course of digestion, the action of drugs and their action on the head and lungs as well as the life of these organs, at the same time correcting many of the errors into which the physiologists had fallen, no answer was forthcoming to our assertion.

When we advanced the fact that animals were so dissimilar to man—as witness the frog, which is never killed by electric currents; the horse, which succumbs to currents which exercise curative effects on human beings—no one was able to deny these differences, which have caused so many erroneous conclusions and which resemble the great variations met with in drugs and have led to many mistaken treatments in the practice of medicine.

Used Cinematograph.

When we proposed the use of the cinematograph, which can show thousands of times, without pain, the operations considered useful for the purposes of instruction, and which are so imperfectly to be observed when performed upon animals, for an illustrative course of lectures, which are otherwise more of a school of cruelty than anything else, clever surgeons made use of the newly invented apparatus in their teaching.

Did not this offer to those surgeons, who had until then done no teaching work, and were merely acquiring a reputation for skill in their profession, a new means of displaying their skill, while avoiding the necessity of suffering and death?

When many eminent surgeons, such as Professors Nilaton, Lawson, Tait and Quinn, proved that animal vivisection was of no use as practice for operations, and did not result in the acquirement of skill, many surgeons unsuccessfully tried to prove the contrary.

When we showed, with the support of Professors Albert Robin and Huchard that in medicine, the art of curing and the curative treatment by drugs have rather been hindered by the errors, than advanced by the merits of vivisection, not a few doctors supported us with applause.

When, with the discovery of the X-rays, of radium, and of a new chemistry came the formation of new serums, of toxins and antitoxins owing nothing to vivisection, it seemed that Pasteurism was about to enter on a new and fruitful path, and this it is slowly, but surely doing.

On all sides, new horizons, that vivisection has obscured instead of, as is claimed for it, rendered lighter, are to be seen.

It has been remarked already, and may be repeated, that for centuries the judiciary believed torture to be necessary for the purpose of obtaining avowals from criminals. How mistaken they were is indisputably proved, yet, nevertheless, magistrates were to be found a century after the abolition of torture, who considered that it was necessary. Pain has the effect of vitiating the physiological process, yet there are those who wish to draw inferences as to the normal course under such conditions. What a heresy!

This is what should have been said in the past, instead of wasting time over generalities, vague affirmations and undefined charges.

The arguments mentioned above may be proved in detail and their truth shown by extracts from the works of vivisectionists themselves, and their books and periodicals. Documents also abound to show the sufferings which exist in so many laboratories.

The latter, however, and we maintain it, cannot now be justified; they may be replaced by scientific processes, which are at the same time exact and certain. Above all, this should be made known to the general public, so that the conviction of its truth may become widespread.—Dr. Foveau de Courmelles.

## English Women Mill Slaves

Data Collected by Government Inspectors Show Life of Drudgery in Factories.

(Special Dispatch.)

**LONDON, July 25.**

SOME unhappy stories of factory life are contained in a Blue Book which gives the result of a year's work by the Government's staff of 217 men and women factory inspectors.

Nearly 300,000 factories and workshops in which more than 5,000,000 men, women, boys and girls labor were under inspection. It is stated that the number of fatal accidents increased from 1,200 to 1,300 last year, and other accidents increased from 154,972 to 176,852. Last year was a period of trade activity, and better trade means more accidents.

Miss Tracey, one of the inspectors, describes the effect on girls of the succession of long days in a factory.

"A well known man in a Lancashire town," she says, "was telling me only the other day about how he would wake in the morning to the clatter of the girls' and women's clogs as they went past his house at half-past five in the dark on their way to the mills.

"He had exceptional opportunity of judging of the effect of the long day's work, and he told me how bonny children known to him lost their color and their youthful energy in the hard drudgery of this daily toil, how the girls would fall asleep at their work, and how they grew worn and old before their time.

"We see it for ourselves and the women tell us about it. Sometimes one feels that one dare not contemplate too closely the life of our working women, it is such a grave reproach."

Miss Tracey gives an account of a day in the life of one of these women—

"She told me she left home at 5:15 A. M., walked two and a half miles to the factory, stood the whole day at her work, and at six, sometimes later, started to walk home again, and then had to prepare her meal, mend, and do her housework. This case is only typical of thousands of women workers."

Some of the women and girls have to handle heavy weights. Miss Whitworth, another inspector, found a delicate woman helping another to carry fifty-three pound weights. "Is it right I should have to do this kind of work and only have eight shillings a week?" asked the woman.

A case of a woman who worked as a jute spinner until six P. M. on the night her baby was born is mentioned. Another woman returned to the factory eleven days after the birth of a child.

Women in a laundry had to work from six A. M. until midnight on Friday and from six A. M. to nine P. M. on the next day. In a Midlands bakelouse a boy of seventeen was at work from one A. M. until one A. M. the next day, being allowed only an hour or two for sleep. In a jam factory women and girls were kept at work from six A. M. until nine P. M. four or five days in the week.

Words of Cheer.

Washington Star:—"Won't you join our sunshine society?" asked the kindly stranger.

"No," replied the man from the mountains. "We take sunshine as a matter of course. But if you can show us any new ideas about moonshine we might listen with interest."

Extremists. Boston Transcript:—"We recently heard of a man so sticky he wouldn't even give you a pleasant look."

## A LION HUNTING STORY WITH REAL THRILLS

Stewart Edward White, Author, Kills Monster Beast in East Africa After Most Exciting Experience and Hairbreadth Escape.

(Special Dispatch.)

**LONDON, July 25.**

THOSE who have been "on safari" hunting big game in East Africa—and their number must now amount to thousands—will read with great interest Mr. Stewart Edward White's most exciting story of a hunting journey from Mombasa through the Shimba Hills, Nairobi, Kapiti, the Tavo River and Masailand. Mr. White had the good fortune to shoot almost a "record" big lion.

He thus describes the incident:—

"We had proceeded in this fashion for about a mile, when suddenly, and most unexpectedly, the biggest lion I ever saw leaped straight up from a bush twenty-five yards in front of me, and with a tremendous roar vanished behind another bush. I had just time to throw up the .405 shotgun-fashion and to drive a snapshot. Clifford Hill, who was ten yards to my right, saw the fur fly, and we all heard the snarl as the bullet hit. Naturally we expected an instant charge, but, as things turned out, it was evident the lion had not seen us at all. He had leaped at the sight of our men and horses on the skyline, and when the bullet hit him he must have ascribed it to them. At a very rate, he began to circle through the tangled vines in their direction.

From their elevation they could follow his movements. At once they set up howls of terror and appeals for help. Some began frantically to run back and forth. None of them tried to run away; there was nowhere to go! The only thing that saved them was the thick and spiky character of the cover. The lion, instead of charging straight and fast, was picking an easy way.

We tore directly up hill as fast as we were able, leaping from rock to rock and thrusting recklessly through the tangle. About half way up I jumped to the top of a high, central rock, and thence by good luck caught sight of the lion's great yellow head advancing steadily about eighty yards away. I took as good a sight as I could and pulled trigger. The recoil knocked me clear off the boulder, but as I fell I saw his tail go up and knew that I had hit. At once Clifford Hill and I jumped up to the rock again, but the lion had moved out of sight. We all manoeuvred rapidly for position.

Again luck was with me, for again I saw his great head, the mane standing out all around it, and for the second time I planted a heavy bullet square in his chest. This stopped his advance; he lay down. His head was up and his eyes glared, as he uttered the most reverberating and magnificent roars and growls. We came quite close, and I planted my fourth bullet in his shoulder. Even this was not enough. It took a fifth in the same place to finish him, and he died at the last biting great chunks of earth.

## Paris Becomes a Bit Too Gay

Vulgurities Displayed for Benefit of Visitors, Who Return Home Severely Shocked.

(Special Dispatch.)

**PARIS, July 25.**

PARIS is tired of having the epithets "Parisian" and "gay" applied to it for the vulgurities that are displayed chiefly for visitors.

For some time past there has been a revolt against the indecencies of certain of the Paris revues, which are produced mainly for the foreign visitor. It is from these revues that the foreign visitor returns to his homeland satisfied that Paris is living up to its reputation as the "gay" city.

Proceedings have now been instituted by the authorities against two revues whose posters are certainly the most frank to be seen on the boardings-to-day. They are "Caché-ten Nu," at the Moulin Rouge, and "L'Orgie à Babylone," at Olympia. The managers of both these music halls are charged with offending the public morals.

Furthermore, the principal dancers in each revue, whose costumes would not be difficult to describe, since there is so little of them, have also been called to answer for the alleged indecencies of the production.

The campaign against the inartistic nature has resulted in the closing of a number of minor establishments, but this is the first time that an attempt has been made to bring well known halls to book for being too "Parisian."

Prudence.

Washington Star:—"A fat man is always good natured," said Mr. Dolan.

"He only seems so," replied Mr. Hartford. "He has to go easy in an argument with a friend because he knows he's not in condition to see it through to a finish."

To Be Determined.

Washington Star:—"What are you going to do when you get home?"

## SEEING GAY PAREE BY AUTOMOBILE

OUR CORRESPONDENT GETS NEW IDEAS OF OLD CITY FROM VISITING AMERICANS AND CANADIANS—THEY INCLUDE THE LADY FROM PEORIA AND DOCTOR FROM SHEBOYGAN, WHO MAKE NOTES.

(Special Dispatch.)

**PARIS, July 25.**

WE are now going down the Avenue de l'Opera, Opera avenue, one of the most famous, shopping (honk! honk!) street in the world. The city of Paris has a population of—

Your correspondent was seeing Paris in one of the automobiles that leave from in front of the American Express Company every afternoon, with a guide to tell about the points of interest along the route. Your correspondent thought he had seen Paris before—a little of it, at least—but this was seeing it in a new way, and through the eyes of visitors recently arrived from New York, Pawtucket, Denver, Salt Lake City, Springfield (Ill.), Lafayette (Ind.), Montgomery (Ala.), Peoria (Ill.), Sheboygan (Wis.), from the far off Philippines and from Canada, upon whom the city was making its first impression.

"The population of France," continued the guide in a megaphone voice which rose superior to the din of the Paris streets, "is forty-three millions—diminishing all the time."

"There's one less now," called out the Doctor from Sheboygan, Wis., in a voice vibrating with professional interest, as the automobile just failed to cut down a pedestrian crossing the street.

The guide ignored the interruption. He took the view that if any jokes were to be made he could do it himself.

DRINKING IT ALL IN.

As for the Doctor, he did not look as if he could easily be squeaked. He sat with his mouth as well as his eyes open, the better to drink in everything that came along. On his knees he had a prescription pad, upon which he made voluminous notes in lead pencil.

In the seat behind the writer sat a Young Thing in a blue serge dress and silk stockings. (The latter detail was noted when she got out of the automobile at the Louvre.) Beside the Young Thing was Her Ideal, who also wore a blue silk and had the beautiful smile of the newly wed. (Your correspondent did not notice the color of his stockings.) It was obviously a honeymoon couple.

"On the left," the guide was saying, "is the largest drug goods store in Paris."

"Forget it," objected the Doctor. "My wife knows too much about the shops of Paris already. I've barely enough money to get home on now."

The party left the automobile and entered the Louvre. "To visit all the galleries," said the guide, "requires a walk of twenty miles. We will omit a few of them."

Visiting the Louvre.

The Young Thing and Her Ideal looked relieved, but the Lady from Peoria appeared to be disappointed. She was obviously not light minded. She carried a Baedeker, a map of Paris and a notebook. She wore a linen travelling cloak, a pair of spectacles and a glint in her eyes which proclaimed that the Federation of Women's Clubs of Peoria would hear a

paper next November on "The Wonders of Paris."

The pictures of the Louvre excited a mild interest, but there was no genuine animation until the party reached the show case containing the Crown Jewels of France. Then the women crowded in close to see the third largest diamond in the world, valued at \$3,000,000, and the "finest string of pearls in existence, given by the Queen of Spain to Mme. Thiers."

"Madam Tears" was how the Doctor spelled it on his prescription pad. Evidently he knows women.

A veritable stampede occurred when "Mona Lisa" was reached. It appeared to be the one picture in the Louvre about which all the party had heard. That is the advantage of being a woman with a past.

The Lady from Peoria popped questions like a piece of rapid fire artillery, and the guide had to tell the story of the loss and recovery of "La Gioconda."

"Some of the American newspapers said that the thief rolled the canvas up and carried it away under his coat," concluded the guide. "That shows how undaunted the American press is in the face of difficulties because the canvas happens to be a plank of wood half an inch thick."

At this point the Young Thing took advantage of the absorption of the rest of the party to powder her nose, while Her Ideal took advantage of the absorption of the Young Thing to stifle a yawn.

"Yonder is a picture of Mme. Lebrun, painted by herself," said the guide, passing through another gallery. "She was so fond of painting herself that she did it eighteen times. Nowadays some women do it every day."

He looked around with the self-satisfied air of a man who had won a laugh; but he met the eyes of the Lady from Peoria, and the smile on his face went cold.

Another stop was made at the Hotel des Invalides, where the party was shown Napoleon's tomb and the long rows of trophy flags in the Church of Saint Louis. The Lady from Peoria looked at the flags, dinged, battle smoked and tattered, and with the air of one determined not to take any had money, asked of the guide, "Are they the originals?"

The big touring automobile bowed along, back across the river and out into the western section of the city. The guide pointed out the statue of Benjamin Franklin, but the party exhibited no emotion.

Franklin, it will be remembered, was a preacher of the virtue of thrift—a doctrine no longer much esteemed outside Scotland.

The statue of Washington occasioned more interest, and the Lady from Peoria clapped her hands. Veracity, it would appear, still has some standing in the community.

Enthusiasm Grows.

While Her Ideal staidied her, she took a snapshot of the arch—upon an already exposed film of Her Ideal standing in front of the tomb of Napoleon.

The error seemed to disconnect her momentarily, but Her Ideal was in no way disturbed by the thought of having his portrait mixed with that of the Arc de Triomphe. Perhaps he reflected that the masonry might add a needed touch of strength and firmness to his likeness.

The Doctor alone showed no enthusiasm at this point. He was visibly less impressed by the arch than by the fact that the sun was exceedingly warm, and there was no American bar on the automobile.

As the machine whizzed down the Champs-Elysees, he lowered his voice so that the Lady from Peoria could not hear, and remarked to his neighbor, "I'll trade all of Paris just at this moment for a glass of what made Milwaukee famous."

But the Lady from Peoria was busy with her own observations. "It looks like Michigan avenue in Chicago," she said of the Champs-Elysees, thereby definitely establishing it among the great thoroughfares of the world.

BACK AGAIN.

At the aperitif hour the automobile rolled back through the rue Scribe to the offices of the American Express Company. The Doctor had ceased to make notes on his prescription pad, but he had already covered sheets enough to kill or cure the entire population of Sheboygan, Wis.

"Those who want to take the night trip can book with me now," the guide was saying. "Among the places we will visit will be the Moulin Rouge, Heaven, Hell and the Dead Rat."

"That is fairly inclusive," observed the Doctor, "but why omit 'Argatory'?"

"Isn't Paris a dear?" chirped the Young Thing, as she descended from the automobile. "I just love it, don't you?"

Her Ideal started as if waked from a brown study.

"Sure!" he responded, "Paris is all right in its way, but I was wondering who won the game to-day. Our boys played the White Sox, you know, on the home grounds."

## ISSUES NOVEL POLICY AGAINST BLINDNESS

(Special Dispatch.)

**LONDON, July 26.**

A UNIQUE insurance policy, by which the Ocean Accident and Guarantee Corporation secures to the holder a pension of \$5 a week for ten years in the event of his blindness, is presented to every purchaser of a 6c. packet of the new and artistic poster stamp just issued by the National Institute for the Blind. Each packet contains twelve stamps. Five hundred dollars in cash prizes, or other inducement to buy the stamps, is offered by the Society of Poster Art in a novel and interesting competition open to all purchasers of a packet. All the profits from the sales go to swell the fund now being raised to cheapen embossed literature for the blind.