

BASE OF THE LOUVRE.

Exhumed After 200 Years, and
May Be Buried Again.

Paris, December 18.

The excavations made by M. Redon, the architect in charge of the Louvre Palace, recently described in The Tribune, disclose the real aspect of the edifice as seen in the seventeenth century. Two photographs give an accurate idea of the importance of the stone substructures twenty-six feet deep, intended by the architects of Louis XIII and Louis XIV, Le Mercier and Perrault, to be exposed to view. It is through pure forgetfulness that these foundations were buried underground for over two hundred years. The beautiful massive stonework completely transforms the architectural character of the building, and renders it far more imposing. Since the reign of Louis XIV the Louvre has remained knee deep, as it were, underground. It is now found that the entire portion of the Louvre constructed in the seventeenth century was surrounded by the substructure disclosed by the recent excavations. It was the intention of the architects, Le Mercier and Perrault, to complete the dry ditch twenty yards wide around the building when the work, that had been interrupted during the Regency, was resumed by Cardinal Richelieu. A print made in 1651 shows the Louvre surrounded by the dry ditch and the stone substructure. The work on the Louvre was again brought to a standstill by the death of Louis XIII. The war of the Fronde broke out, and the Louvre was momentarily forgotten.

A pamphlet published in 1650 relates that such vast quantities of refuse and garbage were thrown into the dry ditch from the windows of the Louvre and from the neighboring houses as to completely fill it up. The court, on this account, was obliged to abandon the Louvre each year during the month of August to enable the workmen to clean out the ditch and remove the filth. An engraving dated 1771 shows the ditch nearly filled up, and near the Pavillon de Flore a small wine shop had been built in the ditch itself. Other old prints show that a small footbridge had been thrown over the ditch connecting the central entrance gate with the colonnade. Louis XIV summoned an architect from Rome—the Chevalier Bernini—who submitted costly plans for reconstructing the Louvre and surrounding it with a still broader and more magnificent dry ditch. The King, however, by this time got tired of spending so much money on the Louvre, and became absorbed in his immense work at Versailles. The subsidy of 1,000,000 francs a year that Louis XIII and Louis XIV allotted to the Louvre was reduced to 213,000 francs, and finally to 58,000 francs. During the latter period of the reign of Louis XIV the funds were barely sufficient to prevent the unfinished edifice from going to ruin. Louis XV increased the architectural budget of the Louvre, and Louis XVI contributed to its completion.

Napoleon I, with his characteristic energy, placed the Louvre under the care of two of his architects, Percier and Fontaine, with orders to clear away the old houses and wine shops that had been built in the ditches of the palace, and level the ground, which was planted with turf and flower beds. Indeed, it was Napoleon I who put the Louvre in the condition in which it is seen to-day. M. Charles Normand, president of the Society for the Preservation of the Monuments of France, together with several prominent architects and archaeologists, has examined the excavations made by M. Redon, the architect of the palace. It is estimated that 1,000,000 francs would not cover the cost of digging away the earth so as to disclose the substructure. Moreover, such excavations might entail further work, necessary to support the building. It has consequently been decided that matters had better remain as they have for the last two hundred years.

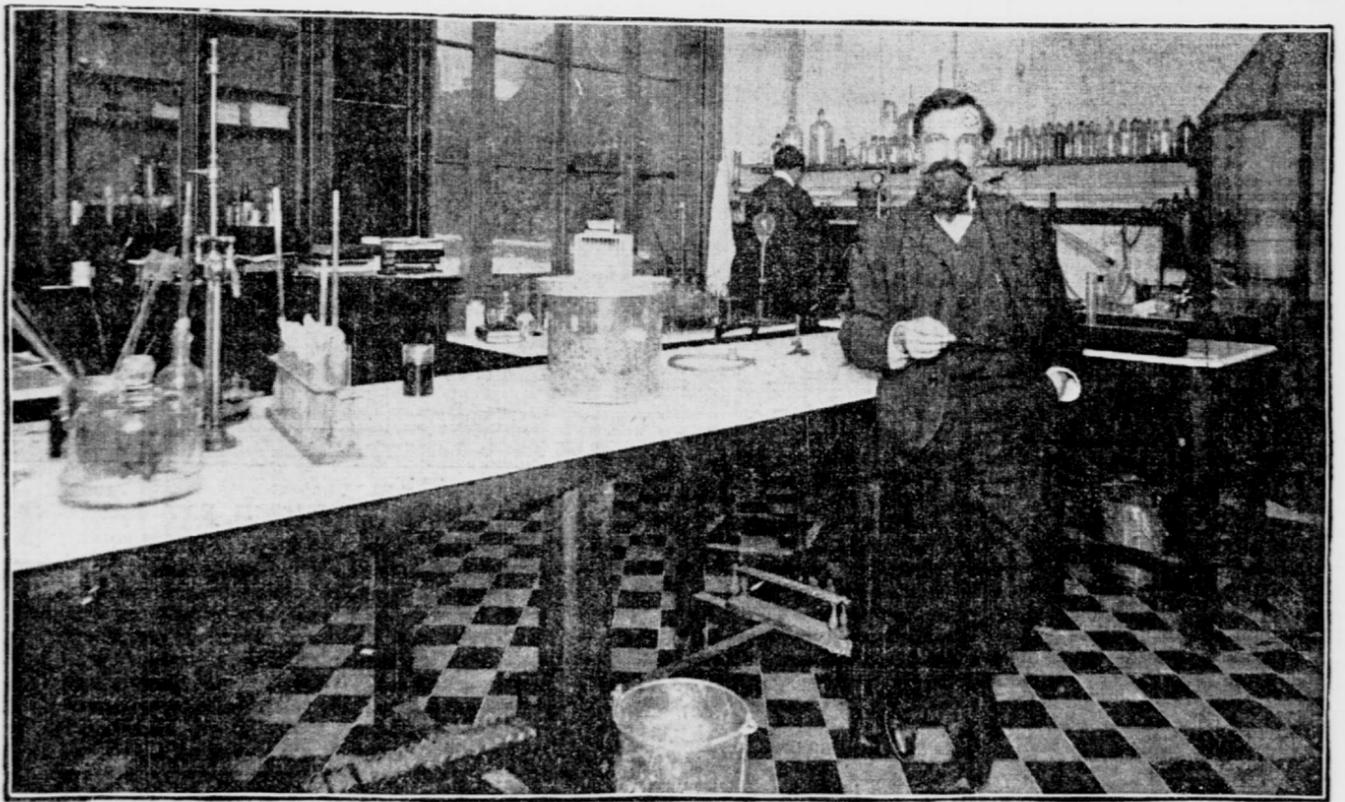
A photograph shows the excavations made by M. Redon near the side entrance to the Louvre near the portion of the building occupied by the Ministry of Finance, fronting the Rue de Rivoli. The stonework of the corner is shown, and the dimensions may be appreciated by the figure of the man (it is that of M. Charles Normand) standing near the large vase on the top of the excavations. This photograph is of special interest, because the excavations will soon be filled up again. To continue the work would exceed the budget provisions of fine arts for the present year, and also of those for many years to come. For two hundred years Parisians have been satisfied with the Louvre without its stone substructure, dry ditch or moat, and in the present state of French finances it is not likely that funds will be voted for restoring the palace to its seventeenth century aspect. C. I. B.

HOW HE TRIED TO CRUSH TRUST.

Senator Cockrell tells of a conversation that once took place between two Missourians with reference to the views of a certain campaign orator who had been scoring "the trusts."

"Oh," exclaimed the first Missourian, bitterly, "he's bitter enough on the trusts now; but we all know that he was once interested in one of them."

"True," responded the other Missourian, "but consider what he did when he realized the enormity of the thing. Really, he did his best to crush that trust. Why, he sold it all his factories for twice what they were worth!"



EXPERIMENTING WITH RADIUM UPON ANIMALS.

Photograph taken especially for The Tribune by Harry C. Ellis, of Paris, showing Professor M. J. Danysz in his laboratory at the Pasteur Institute there, who is conducting an investigation into the effects of the new metal upon life.

RADIUM'S EFFECTS ON ANIMAL LIFE.

The Metal Arrests Growth of Microbes, as Shown by Experiments Now
Going On in Paris.

Paris, December 17.

Radium, that precious metal discovered by the joint researches of Professor Pierre Curie, of the scientific faculty of the Sorbonne, and his wife, and of which only five grams have ever been obtained, becomes more mysterious and phenomenal with each successive scientific investigation. It was Mme. Curie who, by her own experiments, first succeeded in isolating radium and collecting it in the form of a pure salt. From ten tons of pitchblende, brought from Joachimstal, in Bohemia, two decigrams of radium were extracted after a long and delicate chemical process. The cost of obtaining radium was estimated last year at 150,000 francs, or \$30,000, a gram. This would be at the rate of 150,000,000 francs, or \$30,000,000, a kilogram.

I called upon Mme. Curie at her quaint little house, near Montsouris Park, the other day. Her husband had gone to London to attend a scientific meeting. I asked Mme. Curie if she had any additional revelations to make regarding the extraordinary metal which perplexes

and baffles the scientific world and which defies all the hitherto accepted laws of physics. Mme. Curie replied that in addition to the exhaustive paper that her husband read before the Royal Institution of Great Britain on June 19 last there had been no further important developments to disclose. Mme. Curie is a woman of a purely and thoroughly scientific temperament. She positively declined to be drawn out into any expression of opinion or conjecture in regard to any of the practical results or benefits to humanity that may eventually be obtained from radium. She refused, for instance, to say whether she thought that radium might some day serve as a cure or prevention of cancer.

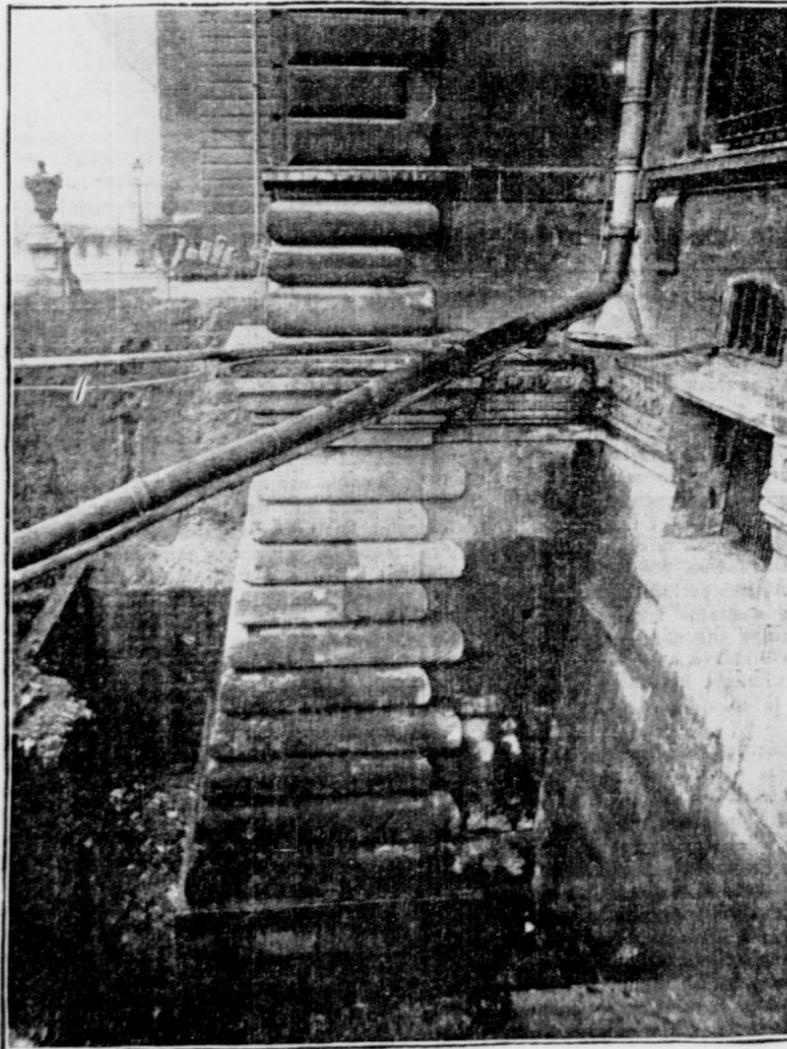
In response to such questions Mme. Curie simply said: "Why, I do not know. How can I tell? I am not aware that anything in that direction has been actually demonstrated!" Sir William Ramsay's announcement that radium gives off a heavy gas, which slowly changes into helium and then vanishes, was mentioned, but Mme. Curie, with cast iron devotion to truth, would not venture upon any assertion

not supported by absolute scientific demonstration. In reply to my question "whether efforts were being made to procure radium in larger quantities than heretofore," Mme. Curie replied "that the Austrian government was taking possession of the pitchblende deposits in Bohemia, which were by no means inexhaustible, and the result of this would be that the future cost of obtaining radium would be very much greater than hitherto—perhaps twice as much." This would put the price of radium at \$60,000,000 a kilogram. The fact is of great importance in connection with the statement made to me last spring by Professor Curie, who said that the probability of extracting radium under favorable conditions from the pitchblende deposits in Colorado was most promising.

I asked Mme. Curie what experiments just now going on in Paris were of the greatest interest. The emphatic reply was: "By all means those conducted at the Pasteur Institute by M. J. Danysz, who is investigating the pathogenic action of rays and emanations emitted by radium upon various animal tissues and substances."

At the Pasteur Institute, in the Rue Duthot, I found M. Danysz hard at work in his laboratory. M. Danysz is a Polish scientist, and has for the last few years assisted Professor Curie in many of his experiments with radium. Professor Curie supplied M. Danysz with fifty milligrams of radium in the bromure form, and it is with this quantity of the metal that the investigations at the Pasteur Institute are being proceeded with. M. Danysz is a wiry little man of highly strung, nervous temperament. His dark, dreamy eyes have that searching brilliancy peculiar to abstruse scientists. He is an indefatigable worker, and derives frequent inspirations during his laboratory experiments from fragrant cigarettes containing the purest Russian tobacco. On the table he had a large glass jar half filled with soft, powdered seaweed, containing a dozen mice of different sizes, varying from two months to two years in age. The animals and insects subjected to the radium rays and emanations by M. Danysz comprise rabbits, guinea pigs, caterpillars and butterflies. Tests have also been made with microbes of carbon.

M. Danysz stated that "the nervous centres of the animals or insects were extremely sensitive to the effect of the radium rays or emanations. The intestinal organs were, on the contrary, only slightly sensitive to the effects of radium." It will be recollected that the effect of radium upon the skin was first noticed by Professor Curie during his earliest experiments with the metal. M. Curie, one morning after delivering a lecture, put a glass tube containing fifty milligrams of radium in his waistcoat pocket. No particular sensation was felt at the time, but a fortnight afterward his skin at the point corresponding with the waistcoat pocket became highly inflamed and painful. The wound broadened and deepened, and could not be cured in less than five months. It was this incident that suggested the epidermic experiments with animals and insects. It was then discovered that the action of radium on the nervous centres produced paralysis or death, according to the particular organism and depending upon the length of exposure to the rays or emanations. A remarkable characteristic of the action of radium upon animals and insects is the period of incubation—twenty days in case of human beings—which has not yet been satisfactorily explained by scientific research, and which furnishes still another mystery to those for which radium is already responsible. Fifty milligrams of radium in a glass tube placed for twenty-four hours in contact with the skin of a guinea pig causes the complete destruction of the epidermis and of the dermis. The skin was pierced with holes, and the tissue protruded in hernia form. M. Danysz stated that the



FOUNDATIONS OF THE LOUVRE.

Photograph taken especially for The Tribune by Harry C. Ellis, of Paris, showing the excavations made recently by M. Redon, which disclosed the 26-foot stone foundation of the Louvre Palace, buried out of sight for two hundred years.