

## Le Petit Parisien of 10 January 1904 and the 1903 Nobel Prize for Physics

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*This description of the discovery of radium and the award of the 1903 Nobel Prize for Physics [1] is of historical interest as it represents public opinion in France in 1904. It has never previously been translated into English and neither has the French text been republished since 1904.*

**Key words:** radium, radioactivity, Marie Curie, Pierre Curie, Nobel Prize for Physics

### Introduction

The artist's drawing of Marie Skłodowska-Curie and Pierre Curie in the rue Lhomond *shed* in which they discovered both polonium and radium in 1898 is probably the most well known artist drawing of the famous laboratory. Published several times, including once in *Nowotwory* [2]. It is the cover of the weekly Illustrated Literary Supplement *Le Petit Parisien* of 10 January 1904 (then in its 16<sup>th</sup> year of publication) in which this 16-page paper also contained an accompanying text. This text is published here for the first time since January 1904.

### A new discovery: radium

“The Stockholm Academy, which met in a solemn session, shared the 1903 Nobel Prize for Physical Sciences between French scientists: M. and Mme Curie for one part and M. Henri Becquerel for the other part.

We know that a total of five Nobel Prizes of value 100,000 francs each, have by the will of the Foundation, to be awarded to writers and scientists who produced works on discoveries which are most important for humanity.

Two and one-half years ago, it was announced that M. and Mme Curie had just discovered and studied new metals, such as radium, with really extraordinary properties: scientific researches which they have made on this topic were acknowledged several times by laureates

of the Institut de France and, a few days ago, they have received the Davy Medal, one of the highest awards of the Royal Society of London.

M. and Mme Curie's work is based on the study of radiations, newly discovered by M. Henri Becquerel, and we enormously applaud the Swedish Academy's decision



**Figure 1.** The artist's impression of the Curies in their laboratory [1].

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in associating the names of these scientists by awarding them the same Prize.

M. Pierre Curie teaches at the Sorbonne and is Professor at the City School of Physics and Chemistry. And Mme Sklodowska-Curie, who is of Polish origin, is a Doctor of Sciences at the Normal School in Sévres. Working with devotion with her husband, her name is associated with a majority of their discoveries and every day she works with him in his laboratory.

It was in 1896 that M. Henri Becquerel discovered, that a metal, uranium, and its components spontaneously, without any external action, emits radiations that are analogous to the well known Roentgen radiations, called "X-rays".

Other substances, such as thorium, present the same properties. We have called "Becquerel radiations" the radiations that come from such bodies and "radioactive substances", the bodies able to emit them. It was possible, with such active substances, and principally with radium, to study phenomena that were only suspected before.

Radiations from radium have some properties the same as X-rays, but as the last ones are produced by external use of electric current and stop when the electric current is switched off, the smaller pieces of radium and analogous substances constitute a permanent and infinite focus of heat and light, a focus of energy with permanent activity, without any external means.

To explain these phenomena M. Cerbelaud says -- "Several hypotheses were proposed: one of the simpler, proposed by M. Curie, consists of supposing that there are unknown inaccessible to our senses, radiations in outer space. Radium could be able to absorb the energy of these radiations and transform them into radioactive energy." M. Cerbelaud added -- "Among the more strange experiences that illustrate the strange properties of radium, we can cite its physiological action. A radium salt, contained in a closed box, which is applied on the eye, or even on the temporal region, is able to produce a sensation of light in the eye.

We even trusted that it could be possible, in this way, to give back their vision to some blind people, and wonderful "radium glasses" were already promised! But we have to renounce this hope. In this experience, the material of the eye becomes luminous by phosphorescence, under the action of radium's rays, and the light that we see has its origin in the eye itself. This could not allow people to see external objects."

Another very interesting effect of the radiations is the one produced on the epidermis: a glass ampoule containing radium salt when placed on the skin does not produce any special sensation. But after about 15 days, a red mark is produced, and then a necrosis, and if the contact is more prolonged, a wound that could take months before healing. We now use this physiological property to treat lupus and cancers.

The energy of pure radium is such that M. Curie said that he would never enter a room where a pound (0.454 kg) of this substance would be present, because

he would lose his sight or would die from his skin being quickly destroyed.

This fear is for the moment unrealistic, remarks M. Cerbelaud, as only very small amounts of radium salts could be available today. They are extracted from a barium mineral extracted in Bohemia, and called "pechblende". It is necessary to treat one ton of this material to extract some grams of radium salt. Today the material from Joachimsthal, which furnished the first samples to M. and Mme Curie is no longer available, and the scientists have great difficulty to find the precious substance.

It is said by Professor d'Arsonval, that to extract only one gram of pure radium, it is necessary to treat more than 10,000 kg of the mineral and the cost of this one gram of radium is close to 150,000 francs.

The discovery of M. and Mme Curie was remarked upon by M Osiris. This generous philanthropist, created at the time of the Universal Exposition of 1900, a Prize of 100,000 francs for work leading to major advances in the history of the sciences. M. Osiris wrote to M. Jean Dupuy, President of the Paris Press Trade Union, to ask him if the Press Trade Union could recommend the awarding of this Prize, and he mentioned the work of M. and Mme Curie. The Trade Union met very quickly after that, and decided to share the 100,000 francs Prize between the two discoveries which had been the greatest known for French science, and gave 60,000 francs to Mme Curie for the continuation of her researches on radium, and 40,000 francs to M. Branley for his work on the wireless telegraph."

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