

# Pioneers – The History of Musculoskeletal Radiology.

The contribution is about Ivan Pulyui

*By Iwona Sudol-Szopińska (radiologist) and Marta Panas-Goworska (culture expert)*

**“There is no higher honour for a scholar than to work for the good of his nation” – Ivan Pulyui (Ів́ан Па́влович Пулю́й)**

A popular saying states that success has many fathers. But who will be remembered in history is often determined by coincidences. This is what happened to the discoverer of X radiation, also known as the Roentgen’s rays. But was this phenomenon justly named? This is a matter of consideration for scholars, and every now and then they raise arguments that question the precedence of Wilhelm Roentgen.

The first documented recreation of these type of rays is attributed to the physician and physicist William Morgan (1750–1883), who began experiments with a vacuum tube. His findings in 1785 have been described as “the first recreation of the Roentgen’s rays.” For the next century, other scientists mainly dealt with the acquisition of radiation itself, without testing its diagnostic capacity. This was until two great men of science, almost simultaneously, began working on the same problem; cathode rays. They were Wilhelm Roentgen and Ivan Pulyui.

Ivan Pulyui (German: Johann Puluj), born on 2nd February 1845 in Western Ukraine (then the Austro-Hungarian Empire), was a broadly educated scholar. He graduated from the University of Vienna and obtained his doctoral degree at the University of Strasbourg under the supervision of the physicist August Kundt. He was a lecturer at, amongst other places, the German Polytechnic Institute in Prague. Whilst his scientific accomplishments encompass only slightly more than 50 papers, scholars underline their significance and interdisciplinary character as they cover the fields of astronomy, gas properties, molecular physics and theory of heat. Owing to the fact that Pulyui completed glazier trainings, he produced, or to be more precise, blew glass ampules as Christmas baubles to serve as Crookes tube elements. Interestingly, he made them not only for himself, but also for another genius inventor, also in the field of radiology, namely Nikola Tesla (who will be the hero of one of the next editions of the Pioneers). The scientific world was not as vast then as it is today, and both Roentgen and Pulyui were aware of each other’s efforts. However, they tried to guard their secrets and did not reveal to others what they finally managed to discover.

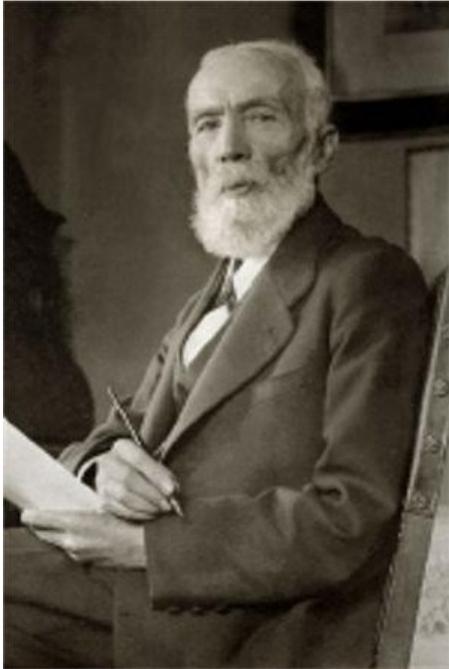
This is why there are no sources that can unambiguously and absolutely prove which of these scientists was the pioneer of radiation in medical imaging. In the end, it is thought that Roentgen was the first to note the practical application of X rays, and Pulyui himself is said to have mentioned that “He [Roentgen] developed it further.” Nonetheless, there has been a controversial silence regarding these two scholars for years, and perhaps the genuine

contribution of Ivan Pulyui still awaits its discovery. Who knows, perhaps it will turn out that the citizens of a small Ukrainian town of Hrymailiv near Ternopil will take heed of the maxim of their great compatriot and make their contribution to the history of world radiology. As Pulyui would say: "There is no higher honour for a scholar than to work for the good of his nation."



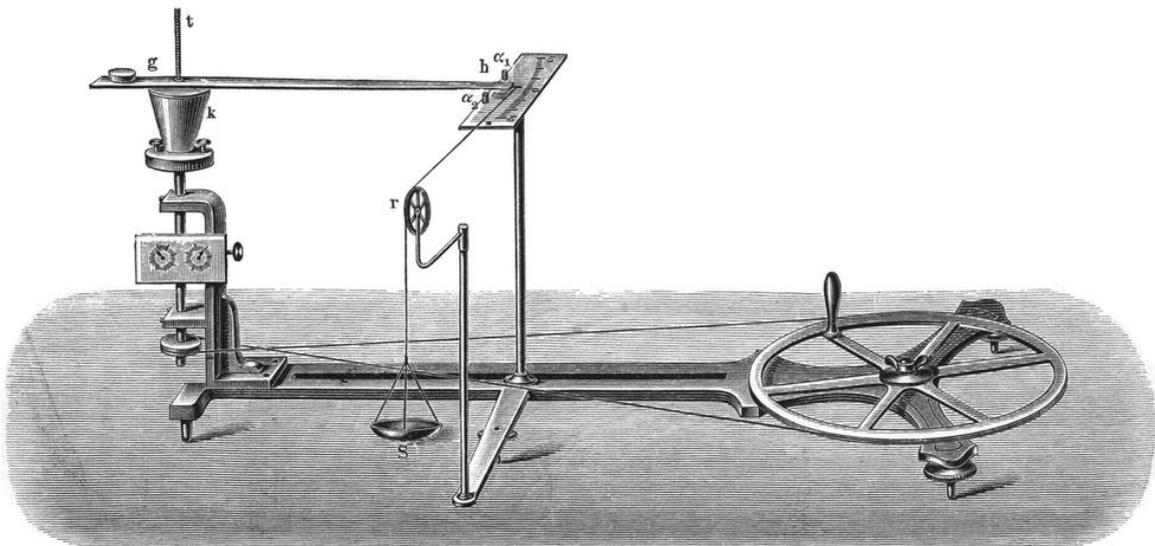
Pulyui 's ampule [MP1]

Pulyui 's tube, 1900 <http://physik.uibk.ac.at/museum/de/details/tubes/puluj.html> (accessed on 09.02.2019)



Ivan Pulyui 1910

[https://commons.wikimedia.org/wiki/Category:Ivan\\_Pulyui#/media/File:%D0%86%D0%B2%D0%B0%D0%BD\\_%D0%9F%D1%83%D0%BB%D1%8E%D0%B9.jpg](https://commons.wikimedia.org/wiki/Category:Ivan_Pulyui#/media/File:%D0%86%D0%B2%D0%B0%D0%BD_%D0%9F%D1%83%D0%BB%D1%8E%D0%B9.jpg) (accessed on 09.02.2019)



Pulyui 's instrument for measuring mechanical equivalent of heat (a physical unit no longer used today), awarded at the Global Exhibition in Paris in 1878.

[https://commons.wikimedia.org/wiki/Category:Ivan\\_Pulyui#/media/File:Apparat\\_nach\\_Pulu\\_j.png](https://commons.wikimedia.org/wiki/Category:Ivan_Pulyui#/media/File:Apparat_nach_Pulu_j.png) (accessed on 09.02.2019).



# World Association of Roentgenologists

[https://en.wikipedia.org/wiki/Ivan\\_Puluj#/media/File:Ivan\\_Puluj.jpg](https://en.wikipedia.org/wiki/Ivan_Puluj#/media/File:Ivan_Puluj.jpg) (accessed on 09.02.2019).

The World Association of Roentgenologists commemorated Pulyui in 2018.

## **Iwona Sudot-Szopińska (radiologist) and Marta Panas-Goworska (culture expert)**

### **Biographical notes**

**Iwona Sudot-Szopińska** was born in Zwoleń, Poland, in 1970. She graduated from the Medical University of Warsaw, and obtained first-degree specialization in nuclear medicine in 1998 and in radiology in 2002. She defended her doctoral dissertation in 1998 and was awarded a habilitation degree in 2003. The title of a professor was conferred upon her by the President of the Republic of Poland in 2012. Since 1996 she has been working at the Medical University of Warsaw, and in 2010 she was appointed the Head of the Department of Radiology in the National Institute of Geriatrics, Rheumatology and Rehabilitation in Warsaw, where since 2015 she has been also working as the Director for Research. In 2015–2018, she held the function of a chairperson of the ESSR Arthritis Subcommittee. She is the author of 280 articles, 30 chapters and 5 monographs. She is an editor-in-chief of “Journal of Ultrasonography” and “Acta Historiae Medicinae. Journal of the History of Medicine, Ethics and Deontology.” She is interested in the history of women in science and in the history of radiology and rheumatology.

**Marta Panas-Goworska** was born in Lublin, Poland, in 1980. She obtained a university diploma in cultural studies. With her husband, Andrzej Goworski, she wrote four books on the history of Russia. In 2017, their book entitled "Scientists under the red star" (in polish, PWN, 2016), which tells a story of scholars in the Soviet Union, was awarded in the competition for the best scientific book in 2016 year, organized by the Jagiellonian University and the Euclid Foundation of Science Popularization. Moreover, she is the author of several dozen articles about culture

and art. She is most keen on telling stories of figures, including inventors and pioneers in medicine, who, despite their pivotal discoveries, have been forgotten for various reasons or remain unknown to the wider public.

