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Biographies from *NOWOTWORY Journal of Oncology* 2006–2017

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Introduction

All major oncological journals have during the last 20 years or so, devoted very few pages to the history of medicine, except in the centenary years of the discoveries of X-rays (Wilhelm Conrad Röntgen in 1895), radioactivity (Antoine-Henri Becquerel in 1896) and radium (Marie & Pierre Curie in 1898). These major journals include the *International Journal of Radiation Oncology, Biology & Physics* (the so-called red journal), *Radiotherapy & Oncology* (the so-called green journal), *Strahlentherapie und Onkologie*, and the *British Journal of Radiology*.

Nowotwory Journal of Oncology has had a different philosophy and has continued to publish history of medicine papers relating to oncology. These papers, and also *Nowotwory* books/supplements [1–4] often contain items of biographical information.

However, in addition, from time to time, *Nowotwory* has published special papers which are biographies of pioneers who have made important impacts in the field of radiation oncology. In this paper they are now gathered together in a bibliography to enable researchers in the history of radiation oncology to more easily access them.

So much has been written about Wilhelm Röntgen, Marie Curie, and Irène & Frédéric Joliot-Curie that it would have been repetitious to give them lengthy individual *Nowotwory* illustrated biographies. Nevertheless they are mentioned in papers to celebrate the 120th anniversary of the discovery of X-rays [5], the 110th anniversary of the discovery of polonium [6] and the 75th anniversary of the discovery by the Joliot-Curies of the artificial production of radioactive elements [7].

Figure 1. Wilhelm Conrad Röntgen

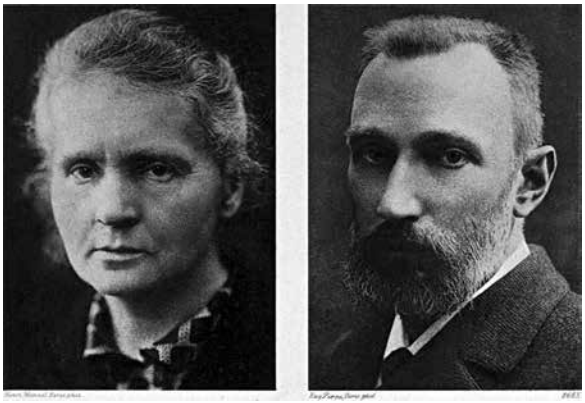

Figure 2. Marie & Pierre Curie

Cartmel
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Cumbria LA11 6QG
United Kingdom

Artykuł w wersji pierwotnej:
Mould RF. Biographies from NOWOTWORY Journal of Oncology 2006–2017. *NOWOTWORY J Oncol* 2016; 66: 351–356.
Należy cytować wersję pierwotną.

Figure 3. Irène & Frédéric Joliot-Curie

Figure 4. Hermann Strebel

Pierre Curie 1859–1906

2006 when this biography was published [8] was the centenary of Pierre Curie's accidental death when he was killed by a horse-drawn carriage on the rue Dauphine near the Pont Neuf, Paris. Much has been written about Maria Sklodowska-Curie and to a certain extent Pierre Curie has in print been relegated to the background. It is perhaps sometimes forgotten that Pierre made significant contributions to scientific research before meeting Maria in 1894 and before 1898, the year he began concentrating solely on the study of polonium, radium and radon. This included the work with his brother Jacques-Paul Curie (1856–1941) on piezoelectricity [9]. Only a single biography of Pierre Curie has ever been written. This was in 1923 by Marie [10]. It has been reprinted a few times, the latest being a Polish edition in 2004 [11].

Hermann Strebel 1868–1943

Hermann Strebel [12] made vital early contributions to the modality of brachytherapy by proposing afterloading and cross-firing [13, 14] which are two basic principles of modern remote-controlled brachytherapy. He was also one of the earliest to propose the use of radium for therapy of skin afflictions. At various times in his career he was a dermatologist, venerealogist, electrotherapist, ultraviolet light therapist, radium therapist, X-ray therapist and plastic surgeon. In addition to practising medicine he was also an accomplished amateur astronomer, having built a formidable private observatory at Herrsching, near Munich.

Eve Curie-Labouisse 1904–2007

Eve Curie led a brilliant and multi-faceted life, some of which with her involvement in the higher echelons of French politics before the fall of France in 1940, are now virtually forgotten [15]. Unlike her mother Marie and her sister Irène & brother-in-law Frédéric Joliot-Curie, she was never the subject of a biography. Moreover, in the biographies of Marie Curie, Eve receives relatively little mention. Material concerning her life is therefore rather scattered, often found in now obscure publications. Her life can probably be said to fall into several periods, although some will overlap. Childhood in Paris with some holidays in Poland; youth as a pianist, music critic and journalist; the years immediately following her mother's death when she wrote *Madame Curie* [16]; the years in Paris just before WWII; escape to London, lecture tours of the USA, working with the Free French and her *Journey Among Warriors* [17]; work with NATO after WWII; marriage and UNICEF.

Figure 5. Eve Curie

Figure 6. Antoine-Henri Becquerel

Figure 7. Howard Kelly

Antoine-Henri Becquerel 1852–1908

His grandfather (Antoine-César), father (Alexandre Edmond) and son (Jean Antoine Edmond Marie) all held the chair of physics at the Muséum National d'Histoire Naturelle: an unbroken period for the four generations of Becquerels from 1788 to 1953. Antoine-Henri's appointment began in 1892 and on 1 March 1896 he discovered the phenomenon of radioactivity. In his honour, the 'rays' were originally known as Becquerel rays, and he received many awards of which the 1903 Nobel Prize for Physics was the most prestigious. It was jointly awarded with Pierre and Marie Curie. It is perhaps surprising that his laboratory facilities were so basic. This was noted by Sir William Crookes who described the facilities as 'restricted', pointing out that he had to use some of his grandfather's and father's apparatus and samples. Crookes also noted that 'the experimental apparatus was extemporised. Card, gummed paper, glass plates, sealing wax, copper wire' were used for Becquerel's experimental purposes. However, even with such limitations, Becquerel still managed to publish 49 papers on radioactivity [18].

Howard Atwood Kelly 1858–1943

Howard Kelly trained in medicine at the University of Pennsylvania's Medical School, from 1877 and in 1880 took a year off to work as a cowboy and itinerant physician in Colorado. Two decades later he was to become one of America's foremost radium pioneers. However, before radium's discovery, Kelly had in 1889 become internationally known as the founding Chief of the Gynaecology Service at Johns Hopkins. (In 1905 John Singer Sargeant painted *The Four Doctors*, William Welsch (1850–1934), William Halsted (1852–1922), William Osler (1849–1919) and Howard Kelly. They were the founding fathers of Johns Hopkins Hospital & Medical School). He was also later to found and maintain his own hospital in Baltimore. He practically invented the surgical subspecialty of gynaecology in the USA. He published extensively on urology and diseases of the appendix, gallbladder, and rectosigmoid: (writing several clinical textbooks, he was among the first to extensively use illustrations in his books) in addition to pioneering various surgical techniques [19].

Louis-Frédéric Wickham 1861–1913

Louis-Frédérick Wickham and Paul-Marie Degrais, both radium martyrs, co-authored in 1909 the first text-

Figure 8. Louis-Frédéric Wickham

book written exclusively for radium therapy [20]. By 1906 when he became the Director of the Laboratoire Biologique du Radium, the world's first Radium Institute, which was in the rue Artois, Paris, he was already a well known dermatologist and syphilologist working first at the Hôpital Saint-Louis and later at the Hôpital Saint--Lazare. The organisation of his Laboratory, which was funded by the industrialist Armet de Lisle, was used as a model for many of the earliest radium institutes in Europe and America. After his premature death in 1913 and the upheaval of the 1914–1918 World War and the closure of Wickham's Laboratoire in 1914, Marie Curie's Institut du Radium opened in 1919. The future work of the Institut du Radium overshadowed the earlier contribution of Wickham who became largely forgotten. However, he was a remarkable physician as is indicated by the facts that he was honoured by King George V of Great Britain as a Member of the Royal Victorian Order and was decorated in France as a Chevalier of the Légion d'Honneur [21].

Charles Edmund Stanley Phillips 1871–1945

Major CES Phillips was a wealthy experimental physicist, artist and musician, and one of the founders in 1897 of the Röntgen Society (he was President 1909–1910) and in 1921 of the Institute of Physics. He was also the United Kingdom's first hospital physicist (at the Cancer Hospital, London, now called the Royal Marsden Hospital). Because of the scientific reputations and wealth of his father and grandfather (the latter being involved in the laying in 1857 of the first transatlantic telegraph cable) Charles Phillips gained entry at an early age to the scientific establishment of his era, [22]. He published in 1897 the world's first bibliography of X-ray and radium literature [23]. He also produced an album of early 1896 annotated X-ray images, which he termed *Röntographs*, and which are now in the archive of the Royal Marsden Hospital. He was involved with work on units of measurement for X-rays and proposed in 1907 that the unit should be ionisation-based. In 1909 he invented a night-marching compass for use by the army. The lines of the compass were painted with radium mixed with zinc sulphide so that they were luminous. He was Honorary Treasurer of the Institute of Physics 1925–1945 and when he died he left in excess of £1.25 million to the Institute [22].

Henry Snowden Ward 1865–1911

Snowden Ward was a professional photographer, Editor of *The Photogram* magazine, itinerant lecturer on X-rays in 1896, and the author of the world's first textbook on X-rays, *Practical Radiography*, published in May 1896, [24] with subsequent updated editions in 1898 and 1901. Ward was a Fellow of the Royal Photographic Society and a founding member of the Röntgen Society. The final chapter, on *Applications & Probable Advances* contains the following sections: surgical applications; medicinal value — TB & cancer cure; contents of packets; flaws in metals; false gems; cattle food; radiographing the skull. The descriptions of his lecture on the '*New Light*' are perhaps unique. They are valuable in that they transport us back in time to the very early days of X-rays before medical men took over responsibility for X-ray applications, when the field was organised by photographers and some physicists and electrical engineers. Snowden Ward died suddenly in New York whilst he was giving a course of lectures on Shakespeare, Thackeray and Dickens. By this time he had largely withdrawn from the X--ray field and devoted himself to writing books with his wife as co-author. The topics included a Shakespearean guide to Stratford-on-Avon, photography, Canterbury pilgrimages and the land of Lorna Doone [25, 26].

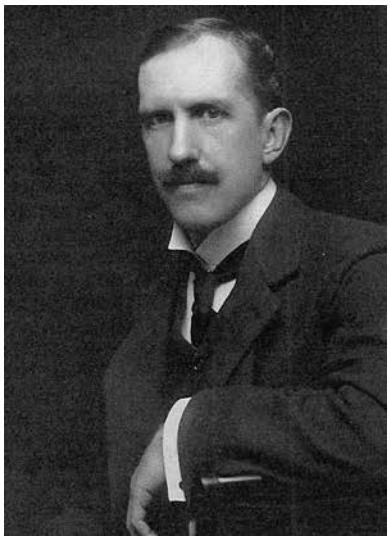

Figure 9. Charles Edmund Stanley Phillips

Figure 10. Henry Snowden Ward

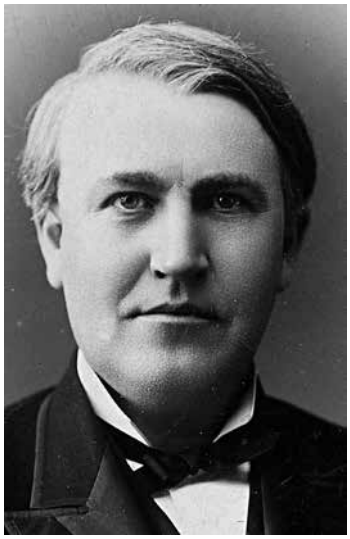

Figure 11. Thomas Alva Edison

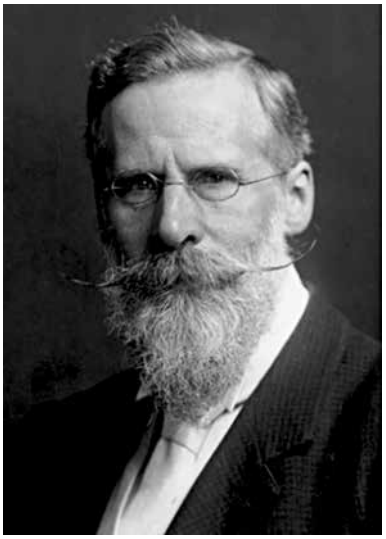

Figure 12. Sir William Crookes

Thomas Alva Edison 1847–1931

Thomas Alva Edison is one of the greatest inventors who ever lived, and certainly the most prolific. Oncologists and medical physicists will have heard of his studies with fluorescent materials, including the design of his fluoroscope and X-ray lamp. Such work with X-rays caused the death of his laboratory assistant Clarence Dally, the first radiation martyr. Edison took out more than one thousand US patents, and these involved the phonograph, the incandescent light bulb and the carbon granule microphone as an improvement for Alexander Graham Bell's telephone. He also invented a system for generating and distributing electricity and designed the first power plant and produced the first talking motion pictures. Often called the *wizard* or *genius* of Menlo Park for the invention factory he created in New Jersey [27].

Sir William Crookes 1832–1919

Sir William Crookes was one of the most famous scientists towards the end of the 19th and in the early 20th centuries and even today his face with its waxed moustache is easily recognisable among scientists. His name is forever associated with the Crookes tube, a gas discharge tube which can be used for the production of X-rays. He is also famous for being one of the few men who had actually produced X-rays in an experimental environment, but who never recognised them as such. He could have preceded Röntgen in the discovery of X-rays by some 15 years! He was a physicist, chemist and inventor, discovering the metal thallium in 1861 and devising the radiometer as a measuring device, and the spinthariscope. He used radium to study the artificial changes in colour of diamonds. Towards the latter part of his life he became interested in spiritualism and in some circles lost a certain amount of credibility because of this interest. He received many honours, including the 1907 Nobel Prize for Chemistry, President of the Royal Society and a knighthood [28].

William David Coolidge 1873–1975

William Coolidge is famous for the invention and development of the hot cathode X-ray tube, sometimes called the Coolidge X-ray tube, which immediately made the previous designs of gas X-ray tube obsolete. He was born in Hudson, Massachusetts, studied at Massachusetts Institute of Technology, and graduated with a PhD in Physics from the University of Leipzig. In 1905 he joined the General Electric Company (GEC) Research Laboratory at Schenectady and in 1913 invented the Coolidge X-ray tube which is the prototype of modern apparatus. He was consultant in X-rays to GEC for some quarter of a century, 1945–1961. As well

Figure 13. William David Coolidge

as his work with X-rays, he developed the first successful submarine detection system, with Irving Langmuir, and during World War II undertook research relating to radar, the atomic bomb, rockets and anti-submarine devices. He was also, during WWII appointed to President Roosevelt's Advisory Committee on Uranium. He obtained 83 patents during his lifetime. Coolidge spent his entire career with GEC, from 1905 when he joined the company at Schenectady to work in lamp research, until his death when he was Emeritus Director of Research & Development. Among his many awards and honours was the Hughes Medal of the Royal Society in 1927 [29].

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