

FAMOUS FIGURES

Marie Curie's Other Role

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A person of greatness can transfer her ability to another sphere or even walk of life when the need is critical. An example of this is the contribution of Marie Curie to the X-Ray services of the French Military Medical Services on the outbreak of the 1914-18 Great War. Radiology began in 1895 when Wilhem Conrad Roentgen from Wurzburg discovered Roentgen or, as he called them himself, X-Rays. The first use of these rays was with what came to be called a 'plain film', demonstrating fractures and the site of foreign bodies such as bullets. The British Army, then representing the Super-Power of the day, was amazingly quick to make use of the new diagnostic wonder. In 1897, in the North West Frontier of India in the Tirali campaign, Surgeon-Major Beevor equipped himself with an X-Ray apparatus he had bought at his own expense. It was carried successfully over difficult terrain and in appalling weather during the fighting. He carried out two hundred X-Ray examinations and demonstrated these to his colleagues and to bemused senior officers on his return from the campaign (1).

In 1898 another of the greatest discoveries in medicine was made by Marie Sklodowska Curie (1867-1934) and her husband Pierre. This was radium and its use was in treating cancer. At once the world of Science realised the worth of both these discoveries. Both Roentgen and Marie Curie in due course, would receive Nobel Prizes. Though Switzerland was the first country to offer the Curies a position worthy of their merit, it is of interest that their first most important summons was to London in 1901, while the Boer War was still in progress. Madame Curie was the first woman to be admitted to a session of the Royal Institution. When they arrived, the first to greet them was the now elderly Lord Kelvin. He was said, in the account written by Madame Curie's daughter later (2), *'as proud of their success as of his own...he took them to see his laboratory, and as they went along, he threw a paternal arm round Pierre's shoulder... he then showed his collaborators the present that had been brought him from Paris - a true physicist's present, a precious particle of radium enclosed in a glass tube.'*

By the time of the First World War, following the far-seeing developments of Sir Alfred Keogh and Lord Haldane, Great Britain had a well-organised service including radiology. But their ally, the



French, were much less well prepared by contrast (3). It was here that Madame Curie, now a widow, made a significant contribution unknown to her many commentators.

The French Army in 1914 was unusual in being the only major army where Medical Officers were not an independent Medical Service. French MOs were under direct command of Regimental officers. They did not even have their own medical supply services; these were administered by the Regimental Quartermasters. The Medical Officers had no lines of evacuation of their own. Surgical treatment was not available until some 30 miles (50 kms) from the front lines. There was no co-ordinated system within the Order of Battle. Marie Curie had, from the outbreak of hostilities in August 1914, set about making a major effort to help. She was about to take up the post of Head of the Radium Institute in Paris. At once she offered financial aid, insisting she would give the money which her Nobel Prize had accrued in Stockholm: *'I had allowed the money for my second Nobel Prize to remain in Swedish crowns...I should like to bring it back to France to invest in war loans'* (4) The French Government was quick to accept but drew the line at melting down her gold medals. She saw at once that what X-Ray facilities as existed were found only in a few large central

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hospitals far away. She saw that if the new diagnosis was to become truly useful, it had to be available much nearer the front line. She consulted a senior radiologist, Dr Henri Beclere. He confirmed that there were no proper facilities whatever in field hospitals for radiology of casualties brought in from Regimental Aid Posts. At this early part of the War, the lines were still mobile. It was clear to Madame Curie that mobile X-Ray stations had to be created at once. First she learned from radiologists how X-Rays worked in a hospital setting. Then she planned the creation of mobile units. She did this by simply converting motor vehicles to carry both apparatus and the men trained to work them. She contacted the French Red Cross and asked several rich women she knew through her own wide personal connections to give the necessary money. She wrote many letters to typical military staff officers who were unhelpful and especially indifferent to an interfering woman.

As a result of her industry and diligence, the first X-Ray vehicle left Paris as early as November 1914. It had a portable machine so this could be moved as required.. The current came from the dynamo driven by the car motor. Pedal bicycles were not used. Both Marie and her daughter Irene went with this first vehicle. It was called 'un petit Curie' and this name stuck. The portable machines were set up in tents or rooms in a building, made dark with 'black-out curtains', as those of us who remember the last Great War will not forget, and connected to the dynamo. The wounded were brought in on stretchers and put on the table by Madame herself or her fellow volunteers, for radiography. At first very few military surgeons had the required experience, or confidence, to use the new apparatus, and it is recorded that they '*required some persuasion*' (4). But as in the British RAMC in the Boer War, they soon became proficient. Again, by using her energy and influence, Marie Curie

had equipped 20 mobile 'petits Curies' and 200 permanent radiology units. It was estimated that over one million wounded men were X-Rayed in her units throughout the War.

He requests for permission to travel to the front were passed from one official to another. One of her requests eventually landed on the desk of the Minister of War himself, whom she happened to know personally. Permission was then granted, although not before she had convinced the Minister to issue new rules allowing women to travel in the new radiological cars... bureaucracy was rampant (4). But by the end of the War, Marie Curie had been to the front line more than thirty times.

She also saw at once that it was not enough to supply motors and equipment without personnel trained to use them safely. In 1916, again with the help of her daughter Irene and a friend Marthe Klein, Madame Curie set up a special course for radiology technicians or 'manipulatrices' to use the French term. This was done at the Edith Cavell Hospital in Paris. Over the next year, more than 150 women from all walks of life trained at this school and passed as X-Ray technicians who then went to the front at Madame's radiology units. Finally, Marie Curie saw, as many do not, the importance of recording as history what had happened, and making sure that both faults as well as favours were fairly included. (5).

References

1. Shadows on the Move - mobile radiological services up to 1918 Dr Jean Guy, quoted in In arduis fidelis, Centenary History of the RAMC, second edition 2001, JSG Blair, p 60.
2. "Life of Madame Curie, Eve Curie, William Heinemann Ltd, London, 1938 chapter XVI, p216.
3. Centenary History of the RAMC, *ibid*, ppl 14-119.
4. Life, *ibid*.
5. Marie Curie's Contributions to Radiology during World War / Arty B.Coppes-Zantinga, Max J.Coppes, medical and paediatric Oncology, 31: 541-543 (1998) with permission from authors kindly given.