

Historical Perspectives

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Marie Sklodowska Curie in America, 1921¹

In 1998, scientists everywhere celebrated the centennial of the discovery of radioactivity. For this discovery, Henri Becquerel, Marie Sklodowska Curie, and her husband, Pierre Curie, received the Nobel Prize in physics in 1903. Marie Curie also discovered the elements polonium and radium in 1898, while conducting research for her doctoral thesis. It was she who actually coined the term "radioactive" (1).

Much attention in these celebrations has been focused on Marie Curie. Her life and work have been documented and examined in a number of biographies, including a short autobiography that she wrote herself (2) and a more comprehensive biography written by Eve Curie, her younger daughter (1). Robert Reid's biography (3) remains a useful source. More recently, Susan Quinn (4) shed light on aspects of Marie Curie's private life that had not been explored previously. Coppes-Zantinga and Coppes (5) called Marie Curie "a giant connecting two centuries" in their 1998 publication. They based their biographic review on many French sources. Marie Curie's work as a student in Becquerel's laboratory is remembered in R. F. Mould's article (6) in the *British Journal of Radiology*. In these reviews, the scien-

tific work of Becquerel and the Curies is authoritatively described by colleagues who, in addition to developing their careers in medicine and physics, have also developed considerable historic scholarship.

The present review will focus on events that took place much later in Marie Curie's life, beginning in the spring of 1921 when she made her first trip to the United States. Examining her connection to America may shed light on why she continues to be remembered beyond the realm of basic science in this new millennium, some 68 years after her death.

The trip to the United States was brought about by an energetic American newspaperwoman. In the spring of 1920, Mrs William Brown Meloney finally succeeded in being granted an interview with Marie Curie at her Paris laboratory. During this first meeting, Mrs Meloney learned that what Marie wanted most at this point in her life was some additional radium so that she could continue her laboratory research. She who had discovered radium, who had freely shared all information about the extraction process, and who had given radium away so that cancer patients could be treated, found herself without the financial means to acquire the expensive substance.

Mrs Meloney made a promise to Marie during that first meeting to correct this injustice and to obtain for her the 1 g of radium that Marie requested. The price for 1 g of radium in 1920 was \$100,000. On returning to America, Mrs Meloney learned that raising this sum was not as easy as she had imagined initially. Nevertheless, she was able to raise the \$100,000 in less than a year, primarily by means of small donations and the help of many women throughout the country. She also convinced Marie Curie to travel to the United States to receive the gift.

Marie Mattingly Meloney was, at this time, the editor of *The Delineator*, a magazine dealing with such subjects as dress-making, needlework, and millinery. De-

spite having a proper private education, Marie Mattingly Meloney was a trailblazing woman in a man's world of journalism. She took a job as a reporter for the *Washington Post* at age 18 and later wrote and worked for a number of other periodicals and newspapers. Her wide range of interests is reflected in her correspondence and manuscripts, which are held by the Rare Book and Manuscript Collection at Columbia University (7). From her position as editor, she led a relief campaign for postwar Europe at one point. During her marriage to William Meloney, she interrupted her career for about a decade and remained at home (8).

Judging from their writing styles, Marie Curie and Mrs Meloney were rather different in temperament. Yet, they were able to connect even at their first meeting and forge a friendship that lasted for the remainder of their lives (9).

On May 3, 1921, the Marie Curie Radium Fund Committee awarded a contract to the Standard Chemical Company of Pittsburgh, Pa, for the 1 g of radium that was to be presented to Marie Curie on May 20 at the White House. At this point, the committee had raised \$82,000 toward its goal of \$100,000. It was not made public how much money the Standard Chemical Company received for its successful contract. Three other companies competed in the bidding (10). Marie Curie's visit to the Standard Chemical Company in Pittsburgh is documented with a number of photographs, which are included in existing biographies. These photographs show her in animated and friendly discussion with two men who are presumably scientists with the company (Fig 1).

In the spring of 1921, Marie Curie arrived in New York City aboard the *Olympic* with her two daughters, Irene and Eve. This was the first trans-Atlantic trip that Marie Curie had ever undertaken. She was in her early 50s. Eve was 16 years old, and Irene was 23 years old. They had lived without Pierre Curie for some 15

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years—Pierre Curie had been killed in a Paris street accident involving a horse-drawn wagon. He died instantly when his head was crushed by one of the wheels (3,4). His brilliant career ended when he was 47 years of age. Thus, Marie Curie was widowed at age 37 and left to raise two small daughters as a single parent.

Pierre Curie met Marie Sklodowska when he was a 36-year-old physicist with an established reputation and she was a 27-year-old student at the Sorbonne. Pierre and his brother, Jacques, had discovered the phenomenon of piezoelectricity and had applied their discovery to the design of instruments. When he met Marie in the spring of 1894, he was the director of laboratories at the School of Industrial Physics and Chemistry, a position he had already occupied for about a decade (4,5). At an early age, he showed an aptitude for mathematics and spatial concepts. He qualified for a bachelor of science degree at age 16 and received a master's degree at age 18. His doctoral research and degree came much later.

After their marriage in 1895, Marie started investigating the radiation that emanates from uranium as part of her doctoral research. Pierre urged her to measure the radiation, which she did by using the piezoelectrometer that he had designed. As this investigation progressed, Pierre abandoned his own crystal research and started to work with her. This led to the discovery that brought them the Nobel Prize in physics in 1903. Marie received her doctoral degree that same year. In 1900, Pierre was appointed the chair of physics at the Sorbonne. He had declined a similar offer from the University of Geneva earlier that same year. When Pierre died in 1906, the president of the Republic of France called at the Curie home. Marie succeeded her husband as chair of physics at the Sorbonne. She was the first woman to hold such an academic appointment (1,3,4).

A large crowd waited at the dock to greet Marie Curie. The dock was decorated with the flags of the United States, France, and Poland. The people who arranged the arrival ceremonies understood and appreciated Marie Curie's international outlook on life. They knew that she had never forgotten where she came from and that she had always remained connected to Poland. By 1921, Marie had already spent most of her life in France. The welcoming bands played music of her homelands.

Mrs Meloney had prepared the American public for this event by writing about



Figure 1. Marie Curie at the Canonsburg Plant of the Standard Chemical Company, Pittsburgh, Pa, 1921. (Image courtesy of the Library of Congress.)

Marie Curie and her work in *The Delineator* and by feeding advance information to her newspaper colleagues—in particular, to those based in New York City (4). When the *Olympic* docked in New York harbor, 26 photographers were waiting for the Curie party (11) (Fig 2). Intense media attention continued throughout the trip. However, Mrs Meloney and her friends knew how to protect Marie from the excessive inquisitiveness of the press and shielded her with care when their enthusiasm became an assault (2). Irene and Eve, envisioned solely as escorts initially, saw their roles change as the trip progressed. Both took over many functions that were expected of their mother, and they filled in for her as much as they could. As Eve writes about this trip, it seems that one of the most astonishing things the daughters learned was what their mother meant to the world. Until then, they had known her only as the unassuming woman with whom they had lived all their lives (1).

On May 12, 1921, the arrival date of the Curie party, the *New York Times* published a front-page article to describe the event under the headline "Mme. Curie Plans to End All Cancers" (11). The article continued on page 3 under the same title, and it also included a large photograph of Marie Curie at the top of the

page. One day later, the newspaper retracted this claim, and the heading read "Radium Not a Cure for Every Cancer." This retraction, however, appeared on page 16 (12). It was stated that, in Marie Curie's opinion, radium was specific therapy for many cancers, but this issue was otherwise not addressed in the substance of the article. Both articles describe in detail Marie Curie's itinerary in New York City and her travel plans for the remainder of her trip. As was the custom then in the *New York Times*, the writers of these articles were not identified. The *New York Times* described Marie Curie as a "motherly looking scientist in plain frock" (11). Other newspaper accounts noted that she seemed to dress mostly in black. At the White House reception, she wore a lace dress that was apparently 10 years old—it was the same dress she had worn when she received her second Nobel Prize (1). She seemed detached and cold to some members of the press, but other reporters called her delicate and timid (11,13).

Her daughters provided interesting copy for the press, since they were so different from one another in appearance and personality. Irene preferred to dress more simply and was not much interested in small talk. As Drexel (13) of the *Washington Post* noted, Irene looked like and



Figure 2. New York City arrival of the Curie party, May 12, 1921. Marie Curie (holding hat) is flanked by daughters Eve (on her left) and Irene (on her right). Mrs William Brown Meloney is at far left. (Image courtesy of the Library of Congress.)

came across as a science instructor, which, in fact, she was. Irene went on to win a Nobel Prize in chemistry in 1935, sharing it with her husband, Frederick Joliot.

Eve was vivacious and pretty, and she liked to dress fashionably. She seemed to enjoy all the attention given to her and was having the time of her life at most events (14). Unlike her parents and sister, Eve never showed an interest in science. She had musical and literary talents. After an early career as a concert pianist, she became a writer, a lecturer, and a diplomat (14). The biography of her mother that she wrote was simultaneously published in France, other European countries, and the United States in 1937, where it became an award-winning best-seller (15). Eve married Henry Richardson Labouisse, then the American ambassador to Greece. Now widowed, Eve Curie Labouisse resides in New York.

The highlight of this trip came when Marie Sklodowska Curie was received at the White House on May 20, 1921 (Fig 3). On that day, President Harding handed the radium gift over to Marie. In an afternoon ceremony before a group of dignitaries, he first presented to Marie Curie the deed to the gift. The deed was inscribed on a scroll that was tied with red, white, and blue ribbons. Then he gave

her a small key to the polished, lead-lined mahogany box that contained the precious radium. Until then, the radium had been kept at the Bureau of Standards, where it had been tested and where it remained until just before Marie Curie's departure from New York City. A facsimile had been prepared because of concern that the radium might not be ready for presentation. The facsimile was given to Mrs Harding as a souvenir of this occasion (13). According to Mould (6), the lead-lined mahogany box remains in the museum of the Institut du Radium. A plaque attached to the container reads, "Presented by the President of the United States on behalf of the women of America to Madame Marie Sklodowska Curie in recognition of her transcendent service to science and to humanity in the discovery of radium" (6).

In the speech that followed the radium presentation, President Harding welcomed Marie Curie on behalf of the American people, calling her the "adopted daughter of France" and the "native-born daughter of Poland." The following are some excerpts from the speech that President Harding made during that White House ceremony (14):

As a nation whose womanhood has been exalted to fullest participation in

citizenship, we are proud to honor in you a woman whose work has earned universal acclaim and attested woman's equality in every intellectual and spiritual activity. . . .

. . . We greet you as foremost among scientists in the age of science, as leader—among women in the generation which sees woman come tardily into her own—we greet you as an exemplar of liberty's victories in the generation wherein liberty has won her crown of glory. . . .

. . . We bring to you the meed of honor which is due to preeminence in science, scholarship, research, and humanitarianism. . . .

. . . In testimony of the affection of the American people, of their confidence in your scientific work, and of their earnest wish that your genius and energy may receive all encouragement to carry forward your efforts for the advance of science and conquest of disease, I have been commissioned to present to you this little phial of radium. To you we owe our knowledge and possession of it, and so to you we give it, confident that in your possession it will be the means further to unveil the fascinating secrets of nature, to widen the field of useful knowledge, to alleviate suffering among the children of man. Take it to use as your wisdom shall direct and your purpose of service shall incline you. Be sure that we esteem it but a small earnest of the sentiments for which it stands. It betokens the affection of one great people for another. It will remind you of the love of a grateful people for yourself; and it will testify in the useful work to which you devote it, the reverence of mankind for one of its foremost benefactors and most beloved of women.

Marie Curie responded to President Harding's speech with a few remarks, and the guests were introduced to the guest of honor. Realizing that Marie was in frail health, Mrs Harding arranged for her to be seated and quickly ushered the well-wishers on to the Curie daughters. Irene and Eve mingled with the guests and comfortably conversed with them in English, French, or Polish as appropriate. It was apparent to all that they had been carefully educated and that their mother had been intimately involved in their upbringing (1).

The *Washington Post* covered the event in the next day's issue (on Saturday, May 21, 1921) in a front-page article (Fig 4). No photographs were included (13). Constance Drexel, who authored the article, quoted from President Harding's speech, saying "the zeal, ambition and unswerving purpose of a lofty career

could not bar you from splendidly doing all the plain but worthy tasks which fall to every woman's lot." She singled out three women in attendance at the White House: the representative of the Mme Curie committee of Washington, the representative of the national Mme Curie committee of New York, and Mrs William Brown Meloney, whose initiative was acknowledged (14).

An important incident occurred the day before this White House event. When the deed to the radium was brought to Marie for review, she felt she could not accept it because of the way the deed had been drawn up. It made her the sole owner of the radium, with her daughters as the heirs. She insisted that the deed be changed so that the radium would pass from her to the laboratory and not her family. She wanted to ensure that this valuable resource would be available to other scientists for future research. On the afternoon before the White House reception, a lawyer had to rewrite the deed (1).

The trip was tightly scheduled, with many more receptions and long receiving lines. Everyone who had in some way contributed to the gift and the trip wanted to meet Marie Curie or simply come close to the "Radium Lady," as she was sometimes called. But Americans also recognized Marie in other ways. She received nine honorary doctor of science degrees from well-known colleges and universities, which are listed in the appendix of Eve Curie's biography (1). During these events, she always insisted on seeing laboratories and talking to the people who worked there. She also visited laboratories outside universities and at industrial sites. Everywhere she went, Marie took advantage of opportunities to observe, share expertise, and inspect ores, chemicals, equipment, and processing techniques (3). Her male hosts were amazed by the technical expertise of this petite woman and were disarmed by her gentle modesty (3). They responded by making donations of money, ore, and equipment to her Paris laboratory.

When her trip ended some 6 weeks later, Marie returned to Paris not only with the precious radium, but with many other items useful for research. The trip was by all accounts a tremendous financial success. The dollar values of the donations are listed in Robert Reid's biography and were obtained from a letter that Mrs Meloney wrote to the secretary of Yale University shortly after Marie Curie's visit (3). Furthermore, the trip brought to Marie Curie the beginning of many last-



Figure 3. Marie Sklodowska Curie with President Warren G. Harding at the White House, May 20, 1921. (Image courtesy of the Library of Congress.)

ing friendships. Mrs William Brown Meloney, or "Missy," as she was called by the Curie family, was one such lifelong friend. Her boundless energy and selfless desire to help personified to the Curies the best of the American spirit. The 1921 trip to the United States was in many ways a new start for the final period of Marie Curie's life. It is noteworthy that she chose to end her autobiography with a description of this trip. In her own words (2):

I got back to France with a feeling of gratitude for the precious gift of the American women, and with a feeling of affection for their great country tied with ours by mutual sympathy which gives confidence for a peaceful future for humanity.

It was an exhausting and difficult trip for Marie. No longer in good health, she was a private person who enjoyed, above all, her work and the company of her family and close friends. When asked repeatedly if she had regrets about not

having patented her discovery, Marie replied (2):

Humanity, surely, needs practical men who make the best of their work for the sake of their own interests, without forgetting the general interest. But it also needs dreamers, for whom the unselfish following of a purpose is so imperative that it becomes impossible for them to devote much attention to their own material benefit. No doubt it could be said that these idealists do not deserve riches since they do not have the desire for them. It seems, however, that a society well organized ought to assure to these workers the means for efficient labor, in a life from which material care is excluded so that this life may be freely devoted to the service of scientific research.

Although she was by inclination one of these "dreamers," Marie Curie did her share in making dreaming possible for other scientists by devoting a major part of her life to fund-raising. She succeeded admirably in this and established the Ra-

\$100,000 RADIUM GIFT TO MME. CURIE

Harding Makes Presentation at
White House Reception to
Woman Scientist.

BRILLIANT THROG PRESENT

President, Ambassador Jusserand,
the Guest of Honor and Others
Make Brief Addresses.

By CONSTANCE DREXEL.

A small, frail-looking little woman, with a face of cameo-like delicacy under the black of a plain but becoming hat, walked up the aisle behind the President of the United States. It was Mme. Marie Curie, and the great mo-

Figure 4. The front page of the *Washington Post*, May 21, 1921. (Image courtesy of the Library of Congress.)

dium Institute in Paris and in Warsaw. There, scientists from many countries trained, conducted research, and laid some of the foundations of modern radiation oncology.

Sarah Donaldson (16) recently paid tribute to Marie Curie when receiving the Marie Curie Award of the American Association for Women Radiologists, calling her a role model and "mentor in absentia." Donaldson believes that no other woman has had a greater influence on the field of radiology than Marie Curie. The U.S. radiologic community recognized Marie Curie in tangible ways by

awarding her the Gold Medal of the Radiological Society of North America (RSNA) in 1922. We know from existing RSNA archival records that the award ceremony took place on December 7, 1922, at the annual meeting of the RSNA, which was held at the Statler Hotel in Detroit. That year, the Gold Medal was also awarded to Dr Maud Slye of Chicago, Ill; Dr Perry Brown of Boston, Mass; and Dr Gosta Forssell of Stockholm, Sweden. RSNA records are otherwise sketchy, with no other details available, which is true for that entire decade (B. Jarr, oral and written communication, June–July, 2001). Marie Curie and Maud Slye were the first women to receive this honor from the RSNA. Maude Slye was an American pathologist affiliated with the University of Chicago and a cancer researcher of renown (17).

Some 68 years after her death, we continue to be fascinated by Marie Curie's life. Her contributions to basic science remain seminal work in this new millennium, but she was also ahead of her time in other ways: She was a scientist who was willing to share scientific and technical information freely; she had a global outlook on life, especially where her work was concerned; she was willing to embark on fund-raising to sustain her laboratories so that other scientists could undergo training and do their work; and she was able to be a loving wife and an exemplary mother.

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