

名人传记系列 (英文注释版)



Marie Curie

A BIOGRAPHY

居里夫人传

[美] 玛丽莲·贝莉·奥格尔维 著

 中国人民大学出版社

名人传记系列（英文注释版）

MARIE CURIE

A Biography

居里夫人传

[美] 玛丽莲·贝莉·奥格尔维

(Marilyn Bayley Ogilvie)

江苏工业学院图书馆
藏书章

中国人民大学出版社

图书在版编目 (CIP) 数据

居里夫人传: 英文/[美] 奥格尔维著.

北京: 中国人民大学出版社, 2007

(名人传记系列)

ISBN 978-7-300-08462-6

I. 居…

II. 奥…

III. ①英语—语言读物②居里夫人, M. (1867—1934)—传记

IV. H319.4: K

中国版本图书馆 CIP 数据核字 (2007) 第 133571 号

名人传记系列 (英文注释版)

居里夫人传

[美] 玛丽莲·贝莉·奥格尔维 (Marilyn Bailey Ogilvie) 著

出版发行 中国人民大学出版社

社 址 北京中关村大街 31 号 邮政编码 100080

电 话 010-62511242 (总编室) 010-62511398 (质管部)

010-82501766 (邮购部) 010-62514148 (门市部)

010-62515195 (发行公司) 010-62515275 (盗版举报)

网 址 <http://www.crup.com.cn>

<http://www.ttrnet.com> (人大教研网)

经 销 新华书店

印 刷 河北三河市新世纪印务有限公司

规 格 155mm×235mm 16 开本 版 次 2007 年 9 月第 1 版

印 张 11.75 印 次 2007 年 9 月第 1 次印刷

字 数 175 000 定 价 19.80 元

版权所有 侵权必究 印装差错 负责调换

SERIES FOREWORD

In response to high school and public library needs, Greenwood developed this distinguished series of full-length biographies specifically for student use. Prepared by field experts and professionals, these engaging biographies are tailored for high school students who need challenging yet accessible biographies. Ideal for secondary school assignments, the length, format and subject areas are designed to meet educators' requirements and students' interests.

Greenwood offers an extensive selection of biographies spanning all curriculum related subject areas including social studies, the sciences, literature and the arts, history and politics, as well as popular culture, covering public figures and famous personalities from all time periods and backgrounds, both historic and contemporary, who have made an impact on American and/or world culture. Greenwood biographies were chosen based on comprehensive feedback from librarians and educators. Consideration was given to both curriculum relevance and inherent interest. The result is an intriguing mix of the well known and the unexpected, the saints and the sinners from long-ago history and contemporary pop culture. Readers will find a wide array of subject choices from fascinating crime figures like Al Capone to inspiring pioneers like Margaret Mead, from the greatest minds of our time like Stephen Hawking to the most amazing success stories of our day like J.K. Rowling.

While the emphasis is on fact, not glorification, the books are meant to be fun to read. Each volume provides in-depth information about the subject's life from birth through childhood, the teen years, and adulthood. A

IV

SERIES FOREWORD

thorough account relates family background and education, traces personal and professional influences, and explores struggles, accomplishments, and contributions. A timeline highlights the most significant life events against a historical perspective. Bibliographies supplement the reference value of each volume.

INTRODUCTION

When asked to name an important woman scientist, most people would only hesitate a short time before answering, "Marie Curie." The reasons seem obvious. Marie Curie made one of the most important theoretical breakthroughs of the twentieth century when she postulated that radiation was an atomic rather than a chemical property. She was the first person to use the term radioactivity. Her studies motivated a long search that culminated in the isolation of two new elements, polonium and radium. Two aspects of Marie Curie's scientific genius emerge: creativity and perseverance. Although the imaginative discovery of the atomic nature of radiation is perhaps her most significant contribution, without another characteristic, perseverance, she would have been unable to substantiate her hypothesis. Her scientific work netted her two Nobel Prizes, one in physics and the second in chemistry.

When looking at the life of this remarkable scientist, it is easy to picture a stern, one-dimensional woman so totally committed to her science that she was incapable of complex emotions. A deeper examination reveals a woman whose childhood was marred by the sickness and death of a mother and sister, and a father who was also scarred by these losses. Her father struggled to support his remaining four children as a teacher under an oppressive regime in a Poland controlled by the tsar of Russia. Marie's reaction was to reject the religious beliefs of her childhood, and to become involved in political movements. Since many obstacles prevented girls from attending universities in Poland, Marie joined an underground, unofficial university.

In order to earn enough money to attend a foreign university, Marie left home to become a governess. She promptly fell in love with the son of her employers. The love affair was a disaster, making Marie wary of any commitment in the future. When she finally met Pierre Curie, she was reluctant to pledge herself to another relationship. Once she decided to entrust her emotions to Pierre, her loyalty was unswerving even after his tragic, premature death. Marie loved their two children, but sometimes emotionally neglected them, as she herself had felt neglected.

After Pierre's death when Marie's friendship with the married physicist Paul Langevin blossomed into love, the entire country was incensed. From a grieving widow, Marie was portrayed as a scheming home wrecker. Duels were fought between her supporters and detractors and scurrilous newspaper editorials bashed her. Exhausted and ill after the controversy, she gradually reentered society. In her later life she spent much of her time working to develop a new research institution dedicated to radioactivity. During World War I, she established a fleet of mobile X-ray units transported in specially fitted cars. After the war, although she had the time to devote to research, money and supplies were absent. In order to supply her laboratory she traveled to the United States twice and undertook a job totally antithetical to her shy public personality. She became an ambassador for science in a role as fund-raiser.

In her later years she made many enemies within the male scientific establishment who disparaged her work and claimed that her early successes were only possible because of Pierre. As her health declined, she went to her laboratory until she finally could do so no longer. She was a beloved mentor to younger scientists at the Radium Institute, which she had pioneered. Plagued by fatigue, cataracts, and acute anemia she courageously went to the laboratory and gave her lectures at the Sorbonne until her final illness. Her beloved radium eventually killed her as it did her husband many years before.

Marie Curie was a very complex person. A fine creative scientist, she was dogged by her personal demons but managed to transform them into successes. In 1935, the year after her death, Albert Einstein published a memorial to her in which he attributed her discovery of the two new elements both to intuition and to tenacity under the most trying circumstances imaginable. He concluded that of all famous people she was the only one whom fame had not corrupted. It is not surprising that when we think of a famous woman scientist her name comes to the forefront.

A biography is the story of an individual's life. No life is lived in a vacuum, and Marie Curie's life is no exception. By understanding how this

outstanding scientist operated within the context of late nineteenth and early twentieth-century science and society, we are better able to understand both her life and her science. Any individual is the product of many factors. Each person is influenced by parents and siblings, education, religious background, socioeconomic status, spouse and children, national background, and social and political ideals. Both people and science are central to Marie Curie's story. Her family, friends, and scientific colleagues played an essential role in her life. They both molded her and were molded by her. To begin to understand Marie Curie, we must look at all of these factors. Her scientific achievements became the standard for what a woman could attain in science. In order to truly fathom her unique accomplishments we must look at the achievements of some of her contemporary women scientists. Her science was impacted by the landmark discoveries of other scientists, both male and female, so in order to understand her place in the history of science it is important to consider the achievements of other investigators. This biography consists of eleven chapters, but is basically divided chronologically into three major sections: (1) early life and education in Poland and her work as a governess; (2) the major creative part of her life including her university achievements; marriage to, collaboration with, and death of Pierre; raising children, and major scientific achievements culminating in two Nobel Prizes; and (3) finally the last part of her life where she operated a radiology service during World War I, directed her own radium institute, became a fund-raiser for radium as she had become an international icon, and finally her death from exposure to the elements that she discovered.

TIMELINE

- | | |
|-------------------|---|
| 7 November 1867 | Maria Skłodowska born in Warsaw, Poland. |
| 9 May 1878 | Maria Skłodowska's mother died. |
| 12 June 1883 | Graduated from secondary school and obtained a gold medal. |
| 1 January 1886 | Began job as governess with the Zorawskis. |
| March 1889 | Left job with the Zorawskis. |
| 5 November 1891 | Registered as a student at the Sorbonne. |
| June 1893 | Degree in physics from the Sorbonne; first place. |
| July 1894 | Degree in mathematics, Sorbonne, second place. |
| 26 July 1895 | Married Pierre Curie. |
| 12 September 1897 | Irène (Joliot-Curie) was born. |
| 12 September 1898 | Introduced term radioactivity in a published article. |
| 18 July 1898 | Marie and Pierre announced discovery of polonium. |
| 26 July 1898 | Announced discovery of radium with Pierre and Gustave Bémont. |
| December 1903 | Nobel Prize in physics, shared with Henri Becquerel and Pierre. |
| 6 December 1904 | Eve Curie was born. |
| 19 April 1906 | Pierre died in an accident. |
| 5 November 1906 | Became first woman professor at the Sorbonne. |
| 23 January 1911 | Failed to be elected to the French Academy of Sciences. |
| December 1911 | Awarded the Nobel Prize for chemistry. |
| August 1914 | Radium Institute completed. |
| 1914–1919 | Operated mobile X-ray unit during World War I. |

X

TIMELINE

May–June 1921	Visited the United States to receive gram of radium.
1929	Second trip to the United States to raise money for radium research institute in Poland.
4 July 1934	Died of aplastic anemia.
20 April 1995	Reburied in the Panthéon. First woman so honored for her own accomplishments.

CONTENTS

<i>Series Foreword</i>	III
<i>Introduction</i>	V
<i>Timeline</i>	IX
Chapter 1 Early Life and Education	1
Chapter 2 Preparing for the Future	11
Chapter 3 Paris and the Sorbonne	21
Chapter 4 Pierre and Marie	29
Chapter 5 The Discovery of Radium: A Scientific Breakthrough	43
Chapter 6 A Year of Contrasts: Good News, Bad News	63
Chapter 7 “Pierre is Dead? Dead? Absolutely Dead?”	75
Chapter 8 Scandal!	85
Chapter 9 The Second Nobel Prize, Its Aftermath, and War	99
Chapter 10 Marie and the United States of America	113
Chapter 11 Last Years	125
Conclusion	141
<i>Bibliography</i>	145
<i>Index</i>	147
<i>Vocabulary</i>	155

Photo essay follows page 83.

Chapter 1

EARLY LIFE AND EDUCATION

The four surviving children of Bronislawa Sklodowska and Wladyslaw Sklodowski¹ gathered around their gravely ill mother on May 8, 1878. Bronislawa's body was ravaged by the tuberculosis she had contracted some time before 1871 when her youngest daughter, Maria (later to be known as Marie Curie), was only four years old. At this time the only known treatments for tuberculosis were rest, medicinal waters, and a healthy climate.² Bronislawa spent two years of Maria's childhood away from the family home in Warsaw, Poland, taking the "cure" in a French spa. Even before their mother's sickness and ultimate death, Maria's childhood had been difficult. Some of the family's problems were political. Although Poland had once been one of the largest nations in Europe, a series of wars divided it into three provinces, each controlled by a different country. The Sklodowskis grew up in Warsaw, a city dominated by the Russian tsars. Although Wladyslaw was a loyal Pole, he was a mathematics and physics teacher in a government school under Russian control. This situation made his position in the school very precarious, for if he wanted to keep his job he had to appear to be conforming to Russian requirements. If he allowed the students to speak Polish or used Polish himself, he would be replaced by a Russian, since the Russian police kept a close watch over Polish teachers. And should he be suspected of harboring any revolutionary ideas, he would be arrested and severely punished. The fear of reprisals haunted the Sklodowski children throughout their lives.

Children whose lives are filled with pleasure, joy, and love react very differently throughout their lives from those who are haunted by fear and anxiety. Well-to-do middle class American children find it difficult to un-

derstand what it is like to be scarred by apprehension and hunger. To Iraqi, Rwandan, and Bosnian children or to American inner-city children these conditions are normal, and they live their lives accordingly. Throughout her life, Marie Curie felt a great loyalty to Poland, but the hardships that she endured as a child influenced the kind of adult that she became.

Poland's problems stretched back over many years. With a government that had long been inefficient, chaotic, and corrupt, it was ripe for a takeover by its stronger, more efficient neighbors, Austria, Russia, and Prussia. Eager to increase their own territories and thus their power, Poland was partitioned among these countries in the late eighteenth century. For a short time, the Poles saw powerful Napoleon as a potential benefactor. As he was racing around Europe conquering country after country, Napoleon used Polish Legions in many of his battles. After he defeated Austria and Prussia, Napoleon created the Duchy of Warsaw and helped the Poles raise their own army. At the same time, Russia prepared its own plan for restoring the Polish state under the rule of the Russian tsar, Alexander I. Any hope that the Polish people had of regaining control over their country through Napoleon was squelched after his disastrous defeat by Russia (1811–1812). Napoleon's Duchy of Warsaw was replaced by a Kingdom of Poland, connected to Russia by a union with the tsar of Russia. This tsar also became King of Poland, which had its own constitution, parliament, army, and treasury. The remaining territories were united under Prussian rule.

Constant tension existed between the despotic administration in Russia and the constitutional regime in Poland. Young Poles conspired against the government and planned an uprising. On November 29, 1830, the rebellion exploded. Even though the Polish army fought valiantly, in the end it could not compete with the superior resources of Russia and was forced to surrender in September 1831. After the failure of the revolt, many of the concessions the Poles had previously gained from the Russians were taken away. The constitution was annulled, the army was liquidated, Warsaw University was closed, property was confiscated, and suspected dissidents were deported. Many of the exiled leaders went to France, forming an expatriate community in Paris that Marie Curie would later join.

Another failed uprising occurred in January 1863 and lasted through 1865. In the earlier rebellion (1830) as in this one, few peasants were involved. Since they had few rights, most peasants were not overly concerned about who ruled them. Most of the rebels were priests, clerks, burghers (merchants), gentry, and intellectuals. The rebellious Poles were

so harshly defeated in 1865 that they gave up the idea of liberating Poland through military means for many years and resorted to civil disobedience instead. Both the Poles and the Russians needed the support of the peasants in order to be successful. Russian authorities finally recognized that they must court the peasants if they wished to have Poland running smoothly. In 1864 the Russian tsar issued a decree enfranchising them. This long overdue freedom from their feudal obligations did not have the effect that the Russians expected. Instead, the peasants gradually became members of the National Polish Community—the goal of the rebellious Poles.

It was into this political climate that Marie Curie's parents met and married. When Wladyslaw married Bronislawa Boguska in 1860 she was headmistress of one of the best private school for girls in Warsaw. Bronislawa was the oldest of six children of a family of country squires. Although the family belonged to the landowning nobility, its members had to work for others in order to make a living. The family had enough money, however, to give their daughter a good education in a private school in Warsaw. After graduation, she became a teacher in the same school and eventually became its director. Although she had little money, she was a beautiful, accomplished, well-educated woman who was noted for her musical abilities. Wladyslaw was also part of the minor nobility who, because of the misfortunes of Poland, was poor. He studied science at the University of St. Petersburg in Russia and returned to Warsaw where he taught mathematics and physics. The marriage seemed suitable to all observers, lacking only one thing—money.

The couple moved into apartments adjacent to Bronislawa's classrooms. They lived there for seven years, during which time they had five children: Zofia known as Zosia (b. 1862), Józef (b. 1863), Bronislawa, named for her mother and known as Bronia (b. 1865), Helena known as Hela (b. 1866), and Maria known as Manya (b. 1867). Wladyslaw must have convinced the Russians of his orthodoxy, for he received a promotion, which amounted to a second job that allowed Bronislawa to give up her position and stay home with her children. He served both as a professor of mathematics and physics, and school under-inspector. Since they could no longer live in the apartments owned by her school, they moved to quarters provided by Wladyslaw's school. Maria was still a baby when they moved in 1868, but Bronislawa tutored the other children, especially the two older ones, Zofia and Józef.

Because Bronislawa experienced the first symptoms of tuberculosis when her youngest child, Maria, was born she never held the little girl

close or kissed her. Although she may have felt that physically distancing herself from the child would protect her from tuberculosis, it had another less desirable effect on the small girl. Even though her mother smiled and gave her affectionate looks, these signs represented mixed messages to Maria. It was difficult for the youngster to understand the lack of physical contact from a mother who professed a great love for her. Maria worshiped her mother, but when she pushed her clinging hands aside and suggested that she go outside to play in the garden she felt rejected. These childhood experiences may explain why, as she grew older she found it very difficult to be physically close to people.

Maria was always a gifted child. Eve Curie in her biography of her mother described some of the family dynamics. Maria's older sister Bronia enjoyed playing teacher with her little sister Maria, the student. Once when teacher Bronia was stumbling through a reading assignment, four-year-old Maria became impatient, grabbed the book, and read the opening sentence on the page perfectly. Bronia was humiliated, and Maria burst into tears, claiming that she "didn't do it on purpose." As Bronia sulked, Maria said that it wasn't her fault; "it's only because it was so easy!"³ Instead of being delighted, her parents were concerned about her precociousness. They would have preferred that she was a little girl who played with blocks and dolls.

When Bronislawa became ill, much of her care devolved upon the oldest daughter, Zofia (known as Zosia). Her mother selected 11-year-old Zosia to accompany her to the spa where she served her mother as a nurse, maid, laundry woman, and entertainer. Zosia was considered to be "delicate," and the family thought that bathing in the sulfur baths and taking long naps would restore her health. However, it seems that Zosia had little time for these healthful activities. Her constant attention to the needs of Bronislawa resulted in a closeness between the two and contrasted with her mother's behavior toward her younger daughter, Maria, with whom she was physically distant. She did not seem to fret about exposing "delicate" Zosia to tuberculosis. Zosia attended a French school and was an excellent student. Bronislawa was proud of Zosia's school accomplishments and was overjoyed when Zosia announced that she was first in her class. Perhaps it was her background as a schoolteacher, but to Bronislawa Skłodowska it was very important that her children do well in school.

After two years at the spa, it became apparent that Bronislawa's health was not improving, so she and Zosia returned home. As if their mother's grave illness was not enough, politics intruded upon their lives causing Władysław to lose his teaching position and position as under-inspector.

Under-inspector was the highest administrative position in the schools that a Pole could expect to hold. Wladyslaw's loyalty to Russia was always suspect, and when the Russian policy became increasingly more severe, he lost his job. The Russian government had embarked upon a policy known as Russianization, where not only was Poland's official language Russian but Polish officials such as Wladyslaw Sklodowski were replaced by Russian immigrants. The family lost its living quarters, status, and income. In order to survive, Wladyslaw turned the family's new home into a boarding school for boys. The house was raucous and overcrowded, and the school did not solve the Sklodowskis' financial worries as they had hoped. In fact, it may have had a more dire consequence for the family. Both Zosia and her younger sister Bronia contracted typhus in 1874. Often associated with wars and human disasters, typhus had existed in epidemic form in Poland ever since Napoleon's troops first invaded in the early nineteenth century.⁴ Possibly the conditions at the crowded boarding school provided the source of the disease for Zosia and Bronia. Although Bronia recovered, 14-year-old Zosia, her mother's pride and joy, died. It took two more years before their mother finally succumbed to tuberculosis, but she never recovered from the death of the daughter who had given so much to her.

Although Maria, the baby of the family, had spent the least amount of time with their mother, the tragedy seemed to affect her more profoundly than the others. Bronislawa died on May 9, 1878, the day after she had called her children and husband into her bedroom to say goodbye. Ten-year-old Maria sobbed uncontrollably. In two years she had lost both a sister and her mother.

EDUCATION

Maria was only six years old when her father was forced out of his supplemental job as under-inspector. Her formal schooling had begun at the Freta Street School where her mother had been headmistress. In order to get to school Maria had to walk a long distance, so when she was in the third grade her parents enrolled her with her sister Helena in another private school closer to home. By this time, her mother's tuberculosis had gotten much worse, and the family took in a boarder, Antonina Tupalska, a math and history teacher who helped around the house and walked Maria and Helena to school. The children thought that bossy Miss Tupalska was hardly a suitable substitute for their mother. Once they arrived at the Madame Jadwiga Sikorska's private school, the girls received an excellent education. Both she and her sister Helena were in the same class

in school, although Helena was a year older. It must have been difficult for Helena to find her younger sister surpassing her in class. Many years later, Helena recalled an incident in which Maria had forgotten to memorize a long passage in German. Since German was her third class, she used the two ten-minute breaks between classes to learn the passage. Helena complained that it had taken her several hours to learn the same passage. All of the Sklodowski children were fine students, but there is little doubt that Maria's special abilities caused some problems with her brother and sisters.

Although she was required to teach only in Russian, Madame Sikorska was able to conceal what she was really doing from the Russian authorities. While she was actually teaching the Polish language, geography, and history both teacher and students engaged in an elaborate cover-up. For example, home economics on the official program really stood for Polish history. Everyone in the school understood the deception. When the Russian inspectors came students and teachers returned to the required course of study. During Maria's year at school the inspector was quite benign and seemed to empathize with the school's Polish sympathies. At one time he even warned them that the superintendent was coming the next day and that the children should not bring their Polish books to school. However, some of the subsequent inspectors were much more menacing.

Although Maria was the youngest student, she was also the brightest. Since she spoke Russian well she was often chosen to recite when the inspector came to visit. She wrote that "this was a great trial to me, because of my timidity; I wanted always to run away and hide." Maria later described her feelings as anger not timidity. I "wanted always to raise my little arms to shut the people away from me, and sometimes, I must confess, I wanted to raise them as a cat [raises] its paws, to scratch! . . ."⁵

Maria's stern but kindly teacher Mlle. Tupalska was a patriotic Pole. She illegally taught the children Polish history in Polish. The entire class was trained to hide its books when a bell signaled the arrival of the Russian inspector. One morning when they were deeply engrossed in studying Polish history in the forbidden Polish language, the bell sounded. Immediately all remnants of Polish history vanished; the students were calmly sewing buttonholes in squares of material. The inspector asked the teacher to call on one of the students. The frightened victim was Maria. She was always selected because of the extent of her knowledge. After being satisfied that she answered all of his questions correctly, the inspector went off to another classroom. Maria was so upset after he left that she burst into tears.