

Marie Curie

玛丽·居里



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玛丽·居里

董蔚君 注释
蒋德舜 插图

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内 容 简 介

本书介绍世界著名女科学家、镭的发现者玛丽·居里(居里夫人)的一生。

玛丽·居里(1867—1934)是法国物理学家、化学家。原籍波兰,1891年去巴黎大学学习。1895年与法国物理学家皮埃尔·居里结婚。他们共同就白克雷尔在当时首先发现的放射性现象进行研究,先后发现了钋和镭两种天然放射性元素,1903年与白克雷尔合得诺贝尔物理奖。1906年居里不幸因车祸逝世。玛丽·居里继续居里的事业,在巴黎大学任教,当了法国第一位女教授,并继续研究放射性,对原子核科学的发展起了不少推动作用。1911年又获得诺贝尔化学奖。由于长期与放射性物质接触,玛丽·居里的健康受到了严重的损伤。1934年这位两次诺贝尔奖金获得者因辐射病与世长辞。

本书选自英国出版的世界名人丛书,文字浅近流畅,生词与语言难点加了汉语注释,并配有插图,可供高中二年级学生和具有同等英语程度的读者阅读。

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1. Growing up in Poland

Radioactivity¹ is a very important part of modern science, medicine and industry. But until the end of the 19th century, we did not know about radioactivity or what caused² it. We did not know how it could be controlled and used. At the beginning of this century, a new metal³, called radium⁴ was discovered. Radium is one of the most radioactive⁵ metals. After it had been discovered, scientists began to find out much more about radioactivity and could develop ways of using it. So the discovery of radium was a very important part of the scientific knowledge of the modern world, and we owe a great deal to⁶ the scientist who first discovered radium — a woman called Marie Curie⁷.

Marie was born in 1867 in the capital city of

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1. radioactivity [ˌreɪdiəʊæk'tɪvɪti] *n.* 放射性, 辐射能。
 2. cause [kɔːz] *vt.* 引起, 使发生。 3. metal ['metl] *n.* 金属。
 4. radium ['reɪdʒəm] *n.* 镭。 5. radioactive [ˌreɪdiəʊ'æktɪv] *adj.* 有放射性的。 6. owe [əʊ] a great deal to ... 非常感谢……
 7. Marie Curie [mə'ri:'kjuəri] 玛丽·居里(1867—1934, 出生于波兰的法国物理学家和化学家; 本书主人翁)。

Poland, Warsaw¹. Her parents were teachers, and with her brother and three sisters, she grew up in a happy and united family. But Poland was not a pleasant² country to live in, then. Central Poland³ was not ruled by the Polish⁴ people themselves, but by the Emperor of Russia. The Polish people were forced to use the Russian language. Jobs were taken away from them and given to Russians, and the Russian army savagely and brutally beat down⁵ the Polish people each time they tried to rebel.

Then when Marie was eight, a heartbreaking tragedy struck her family.⁶ Her eldest sister caught a disease called typhus⁷, and in a very short while, she died. Just as the family was recovering from this loss⁸, Marie's mother became very ill with a lung disease called tuberculosis⁹, and within two years she

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1. the capital city of Poland, Warsaw 波兰的首都华沙。 capital ['kæpɪtl] *n.* 首都。 Poland ['pəʊlənd] 波兰。 Warsaw ['wɔ:'sɔ:] 华沙。 2. pleasant ['plezənt] *adj.* 愉快的。 3. Central Poland 波兰中部。 central ['sentrəl] *adj.* 中心的。 4. Polish ['pəʊlɪʃ] *adj.* 波兰的。 5. savagely and brutally beat down ... 野蛮地和残酷地镇压…… savagely ['sævɪdʒli] *adv.* 野蛮地。 brutally ['bru:tli] *adv.* 残酷地。 6. ... a heartbreaking tragedy ... family. 一个令人心碎的悲惨事件袭击了她的家庭。 tragedy ['trædʒɪdi] *n.* 悲剧。 7. typhus ['taɪfəs] *n.* 斑疹伤寒。 8. recovering from this loss 从这个损失中恢复过来。 recover ['ri:kʌvə] *vi.* 恢复, 复原。 9. tuberculosis [tju,bə:kju'ləʊsɪs] *n.* 肺结核病。

too had died. These two deaths shocked and hurt Marie and her family¹ and they were very unhappy for a long time.

As the three remaining² sisters grew up, they wanted to become teachers, like their parents. In a Poland ruled by the Russians, girls could not go to university, or go on studying after they left school. So they got together with other young Polish people and held secret classes and discussions for themselves.³ This was very dangerous, for if they were found out, they would be severely punished⁴ by the Russian police. This was Marie's first experience of the 'secret university'.

2. The first years in Paris

Whenever Marie had any spare time in between working as a teacher, she began to read about science.

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1. These two deaths ... family ... 两人的去世使玛丽和她的家庭受到震惊,悲痛异常…… 2. remaining [ri'meiniŋ] *adj.* 留下的。 3. ... held secret classes ... themselves.他们自己秘密上课和讨论。secret['si:krit] *adj.* 秘密的。discussion [dis'kʌʃən] *n.* 讨论。 4. severely punished 严厉地惩罚。severely [si'viəli] *adv.* 严厉地。punish ['pʌniʃ] *vt.* & *vi.* 惩罚。

She was becoming more and more fascinated¹ by all these new ideas and facts she was finding out. She became determined to study science properly, however difficult it might be to get a proper education.² But if she wanted to go to university, she would have to go to another country. So she set to work to save enough money to be able to go abroad³ to university. And in the autumn of 1891, a nervous and excited Marie⁴ arrived in France in time to start the new term at the University of Paris, the Sorbonne⁵. She was 24 years old.

Paris, with its pavements⁶, cafés⁷ and bookstalls⁸ crowded with young students, was a colourful and fascinating city⁹ for Marie. She had freedom to learn new things and to make new friends in a way that was not possible at home in Warsaw. Like other students at the Sorbonne, she lived in a simple garret

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1. fascinate ['fæsineit] *vt.* 使着迷。 2. ... however difficult ... education. 不管获得正规教育有多困难。
 3. go abroad [ə'brɔ:d] 出国, 去外国。 4. a nervous and excited Marie 紧张而又兴奋的玛丽。 nervous ['nɜ:vəs] *adj.* 神经过敏的, 紧张不安的。
 5. the Sorbonne [sɔ:'bɒn] 巴黎大学(前身为索邦神学院)。 6. pavement ['peivmənt] *n.* 人行道。 7. café ['kæfeɪ] *n.* 饭馆, 咖啡馆。 8. bookstall ['bukstɔ:l] *n.* 书摊。
 9. a colourful and fascinating city 一座五光十色的迷人的城市。 colourful ['kʌləfʊl] *adj.* 丰富多采的。 fascinating ['fæsineitiŋ] *adj.* 迷人的。

room¹, plainly furnished². In winter the garret was bitterly cold³, and she had to carry coal for the fire up six flights of stairs⁴.



At first she did not know the French language well, so it was very difficult to understand lessons at the university. She had to do a lot of extra work to catch up with the other students.

-
1. a simple garret room 一间简单的阁楼。garret ['gærit] *n.* 阁楼, 屋顶室。 2. plainly furnished 陈设朴素。plainly ['pleɪnli] *adv.* 简单地, 朴素地。furnish ['fɜːnɪʃ] *vt.* 装备, (用家具等)布置(房间)。 3. bitterly cold 刺骨的寒冷。bitterly ['bɪtəli] *adv.* 严寒的, 刺骨的。 4. six flights of stairs 六段楼梯。flight [flaɪt] *n.* 楼梯的一段。

3. The start of a family

Marie made up for all the lost years in Warsaw.¹ She won herself a proper education in science. Then, in Paris, she met her future husband and scientific partner², Pierre Curie³. Together they would become world-famous for their scientific work. He had already become quite well-known as a scientist for some important new work he was doing, and he was the Laboratory Chief⁴ of one of the science departments at the Sorbonne University.

For their wedding⁵ they were given a present which they treasured for many years — two bicycles.⁶ Off they went on their honeymoon⁷, to explore⁸ the lovely,

-
1. Marie made up ... in Warsaw. 玛丽弥补了过去在华沙失去的年月。 2. scientific partner 科学工作的合作者。 partner ['pɑ:tənə] *n.* 合作者。 3. Pierre Curie ['pɜə 'kjuəri] 皮埃尔·居里(1859—1906, 法国物理学家和化学家)。 4. the Laboratory Chief 实验室主任。 laboratory [lə'bɔ:rətəri] *n.* 实验室。 chief [tʃi:f] *n.* 主任; 首领。 5. wedding ['wedɪŋ] *n.* 婚礼; 结婚。 6. ... a present ... two bicycles. ...他们多年珍贵的礼物——两辆自行车。 present ['prezənt] *n.* 礼物。 treasure ['trezə] *vt.* 珍藏, 珍惜。 bicycle ['baɪsɪkl] *n.* 自行车。 7. Off ... honeymoon, ... 他们就去渡蜜月了, ...honeymoon ['hʌnimu:n] *n.* 蜜月。 8. explore [ɪks'plɔ:] *vt.* 考查; 游览。

peaceful countryside of France.

But all too soon¹ they had to return to work in Paris. Marie found she could learn a lot from Pierre, and that she was able to help him in his work too. They lived quietly and worked hard. Soon, their first daughter, Irene², was born. Now Marie had her husband and her daughter as well as her scientific work to keep her happy and very busy.

4. New discoveries in science

Now Marie began to look for a scientific topic³ which she could explore to find out more new things. This kind of work is called scientific research. There were two topics which Marie thought about very carefully. Only recently there had been two new discoveries which excited and interested scientists all over the world. In 1895, a German scientist named Röntgen⁴ invented an electrical machine which made a kind of

-
1. all too soon 总是太快了(时间太短了)。 2. Irene ['airi:n] 爱琳(女名)。 3. a scientific topic 科研题目。 topic ['tɒpɪk] n. 题目。 4. Röntgen ['rɒntʃən] 伦琴(1845—1923, 法国物理学家, 因发现X光而获1901年诺贝尔物理奖)。

invisible light which he named X-rays. These X-rays can pass through things much more easily than the light we can see. The light we can see—visible light—passes through air, and materials like glass, thin cloth and paper, but it cannot pass through materials like metal, wood and even black paper. X-rays will pass through anything, though less passes through heavy materials like metals than through light ones like wood and paper. ¹Very little gets through lead², for example. Because X-rays can pass through anything, they can even reach a photographic film³ when it is wrapped in black paper.

Very soon, doctors had started to use X-rays to find out where bones in people's hands, arms and legs were broken. They put an X-ray machine on one side of the broken limb⁴, and a photographic film wrapped in black paper on the other side, and switched on the X-ray machine for a few moments. Then they developed the film⁵. It showed a shadow picture⁶ of the limb—the bones in a light colour and the flesh

-
1. ... though less ... paper.虽然透过重的物质, 如金属, 比透过轻的物质, 如木材、纸张要少。 2. Very little ... lead, ... 很少的光能穿过铅, lead [led] *n.* 铅。
3. a photographic film 摄影用的软片(胶卷)。photo graphic [fəʊtə'græfik] *adj.* 摄影用的。 4. limb [lim] *n.* 肢体。
5. developed the film 冲洗软片。 6. a shadow picture (X光拍制的) 影像。

dark¹. They could see clearly if any bones were cracked².

X-rays can also make some chemicals glow³. It was this effect⁴ of the X-rays which led, by chance, to the other very important scientific discovery, and it was this one which interested Marie very much. Only a few months after the discovery of X-rays, a scientist named Becquerel⁵, who was working in Paris, was studying the way some chemicals glow when X-rays, or another kind of invisible light called **ultraviolet** light⁶, shines on them. He had the idea that because some chemicals glow when the X-rays reach them, then other chemicals might *send out* X-rays if strong light was shone on them. He decided to test his ideas to see if he was right. So he did a simple experiment.

He wrapped a piece of photographic film in black paper. Then he put a thin piece of aluminium sheet⁷ on top of it, sprinkled⁸ a chemical on the aluminium

-
1. the bones ... dark 骨头颜色淡, 肌肉颜色深. bone *n.* 骨头. flesh *n.* 肌肉. 2. cracked [krækt] *adj.* 断裂的; 有裂缝的. 3. glow [gləu] *vi.* 发光. 4. effect [i'fekt] *n.* 效果, 结果. 5. Becquerel [bek'rel] 白克雷尔 (1852—1908, 法国物理学家, 放射能的发现者, 与居里夫妇合得 1903 年诺贝尔物理奖). 6. ultraviolet light 紫外线. ultraviolet [ˌʌltrə'vaɪələɪt] *adj.* 紫外的, 紫外线的. 7. aluminium sheet 铝片. aluminium [ˌælju'mɪniəm] *n.* 铝. 8. sprinkle ['sprɪŋkl] *vt.* 撒(某物于表面).

sheet, and put the film, aluminium and chemical out in the bright sunlight for several hours. Professor Becquerel tried many chemicals. The only one which made a shadow picture of the chemical on the photographic plate¹ when he developed it, was a chemical which contained a metal called uranium².

Then something very strange happened. One day he prepared his experiment again. But the sun was not shining, so he put the film, wrapped in black paper, with the aluminium on top of it and the chemical on top of that, in a drawer³, ready for the next time the sun shone. A few days later, he developed the film, even though⁴ it had been in the drawer for several days. To his amazement⁵, the film showed the shadow shape of the uranium chemical; but no sun had shone on the uranium! This meant that the uranium was giving out rays all by itself⁶, which had passed through the aluminium, the black wrapping paper, and reached the film. These rays were like X-rays, but were not the same thing at all. What Becquerel had discovered was **radioactivity**——that some materials give out invisible rays——which we call **radioactive radiation**⁷.

-
1. photographic plate 底片。 2. uranium [ju'reinjəm]
n. 铀。 3. drawer ['drɔ:ə] n. 抽屉。 4. even though
尽管。 5. To his amazement ... 使他惊奇的是…… amazement
[ə'meizmənt] n. 惊奇, 诧异。 6. giving out rays all by
itself 完全靠自身放出射线。 7. radioactive radiation 放
射性辐射。 radiation [ˌreɪdi'eɪʃən] n. 辐射, 放射。

5. Marie's first experiments



Marie decided she would research into radioactivity for her Doctor of Science degree.¹ First she would find out which materials were radioactive. Pierre could help her, because he had invented a machine called an electrometer², which could help her measure³ ra-

-
1. ... research into ... degree. 为取得理学博士学位而深入研究放射能。degree [di'gri:] *n.* 学位, 学衔。 2. electro-
meter [i'lekt'rəmi:tə] *n.* 静电计。 3. measure ['meʒə] *vt.*
测量, 测定。

radioactivity. So Marie tested samples¹ (carefully weighed amounts²) of all the chemicals she could find in the laboratories where she and Pierre worked. In the end, she found that only chemicals which contained either uranium or another metal called thorium³, were radioactive. She also found that the more of these metals her samples contained, the more radioactive they were.⁴

Next, she measured the radioactivity of natural materials like sand and rocks. She knew which metals they contained. But now she discovered something very important about a rock called pitchblende⁵, which contains uranium. She found that a sample of pitchblende rock, was *four times*⁶ as radioactive as chemicals she had tested, which contained the *same amount of uranium* as the pitchblende contained. This meant that the rock, pitchblende, must contain not only uranium, but also something else, which was more radioactive than uranium and was causing the extra radioactivity. Marie and Pierre were very excited at the thought that they might be on the track of⁷ a new radioactive material

1. sample ['sæmpl] *n.* 样品。

2. carefully weighed

amounts 仔细称过的各种份量。

3. thorium ['θɔ:riəm]

n. 钍。

4. ... the more ... they were. 她的样品里

这些金属的含量越多, 它们的放射性就越大。

5. pitch-

blende ['pitʃblend] *n.* 沥青铀矿。

6. four times 四倍。

7. be on the track of 跟踪; 掌握……的线索。