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英文注释

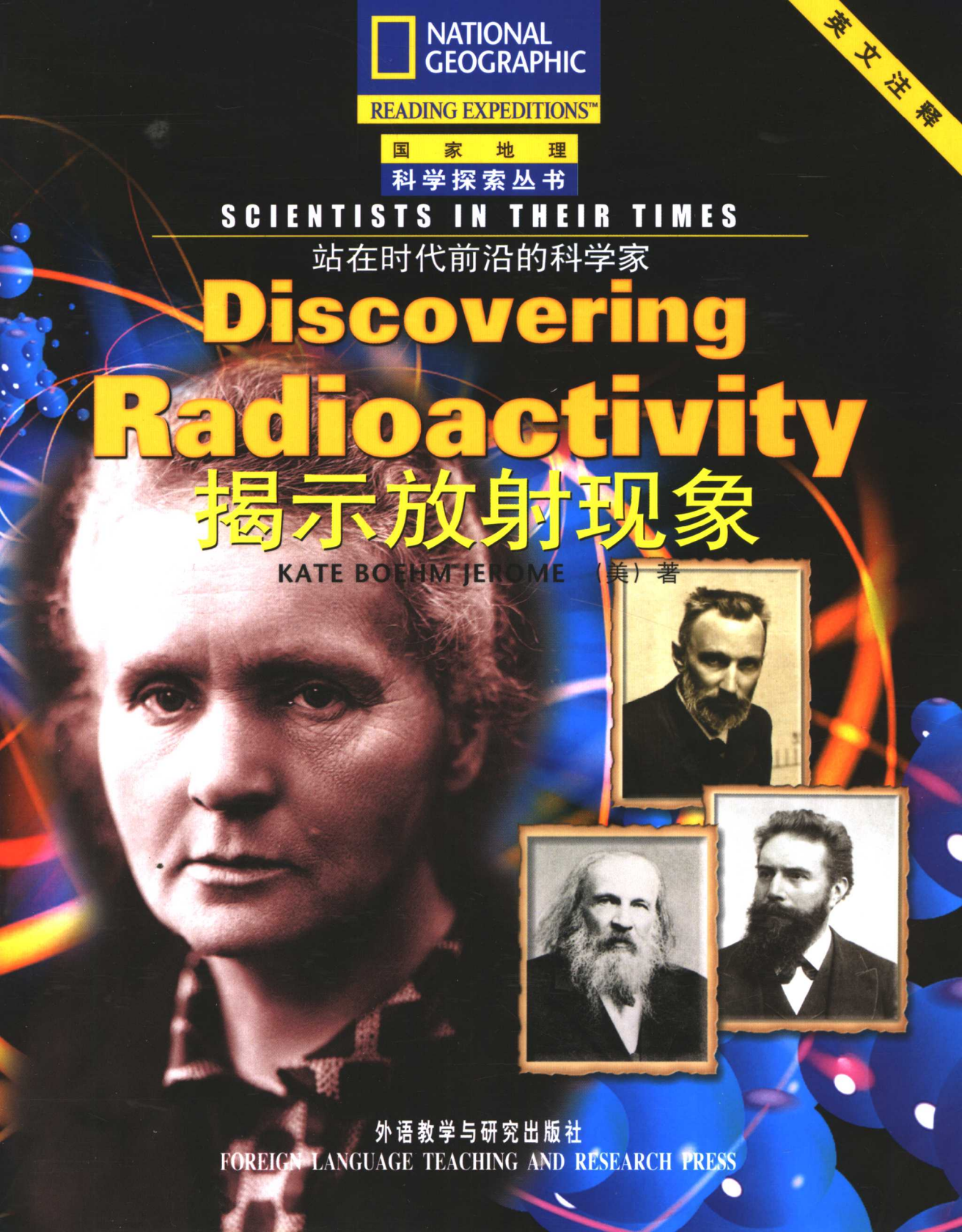
SCIENTISTS IN THEIR TIMES

站在时代前沿的科学家

Discovering Radioactivity

揭示放射现象

KATE BOEHM JEROME （美）著



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如果你希望在享受英语阅读乐趣的同时又能增长知识、开拓视野，由外语教学与研究出版社与美国国家地理学会合作出版的“国家地理科学探索丛书”（英文注释版）正是你的选择。

“国家地理科学探索丛书”（英文注释版）第二辑分为8个系列，共46本，内容涉及自然科学和社会研究，除对本套丛书第一辑已包含的“生命科学”、“物理科学”、“地球科学”和“文明的进程”4个系列进行了补充外，又推出了4个新的系列——“生活中的科学”、“科学背后的数学”、“专题研究”以及“站在时代前沿的科学家”。

这套丛书秉承《国家地理》杂志图文并茂的特色，在书中配有大量精彩的图片，文字地道易懂、深入浅出，将科学性和趣味性完美结合，称得上是一套精致的小百科全书。特别值得一提的是本套丛书在提高青少年读者英语阅读能力的同时，还注重培养他们的科学探索精神、动手能力、逻辑思维能力和沟通能力。

本套丛书既适合学生自学，又可用于课堂教学。丛书各个系列均配有一本教师用书，内容包括背景知识介绍、技能训练提示、评估测试、多项选择题及答案等详尽的教学指导，是对课堂教学的极好补充。

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The Curie lab and equipment, 1898

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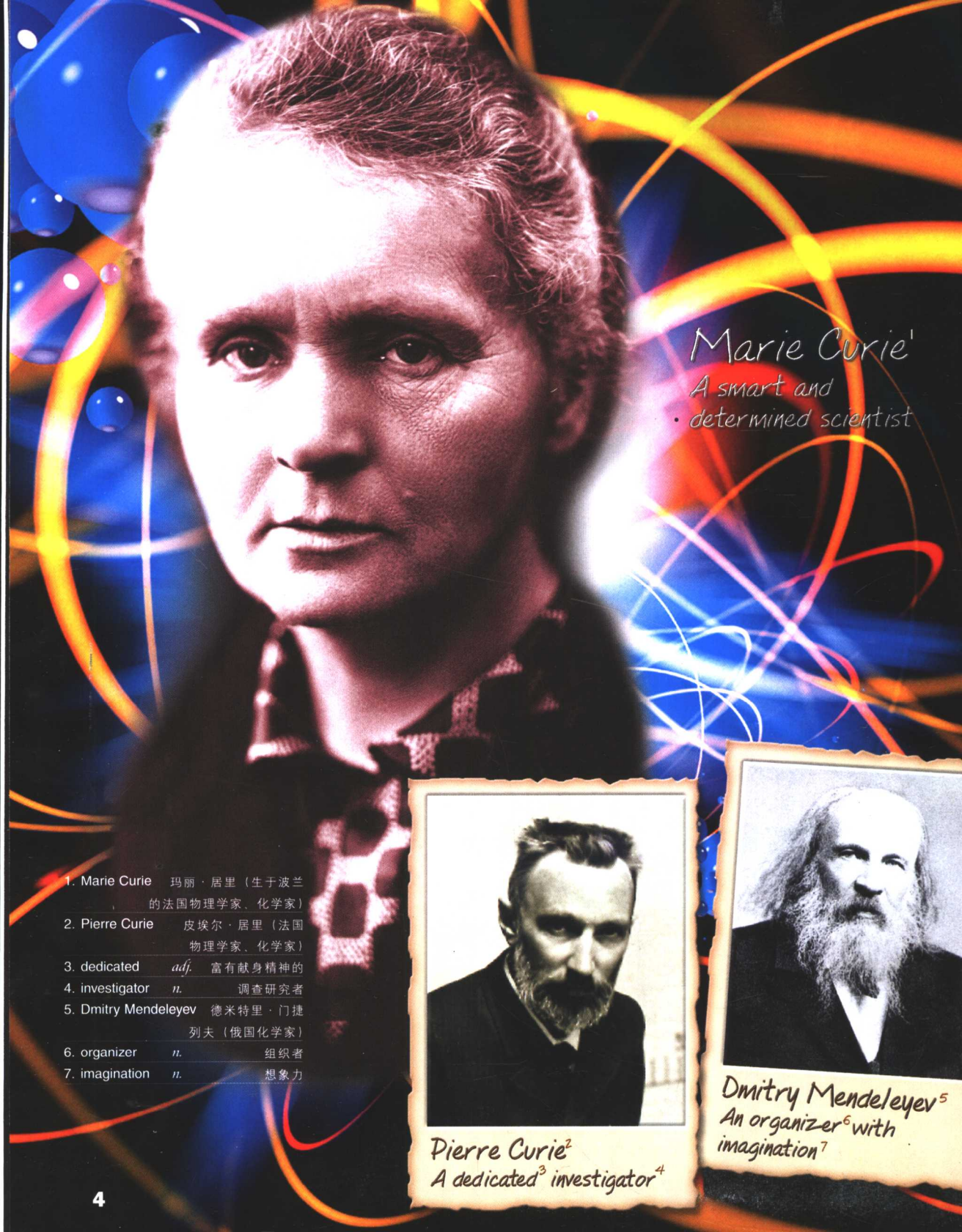


Marie Curie[1]

A smart and determined scientist

Pierre Curie[2]

A dedicated[3] investigator[4]

Dmitry Mendeleyev[5]

An organizer[6] with imagination[7]

1. Marie Curie 玛丽·居里（生于波兰的法国物理学家、化学家）
2. Pierre Curie 皮埃尔·居里（法国物理学家、化学家）
3. dedicated *adj.* 富有献身精神的
4. investigator *n.* 调查研究者
5. Dmitry Mendeleyev 德米特里·门捷列夫（俄国化学家）
6. organizer *n.* 组织者
7. imagination *n.* 想象力

Introduction

引言

A poor young woman. . .an accidental[1] discovery. . .people poisoned[2] by unknown danger. Sounds like the plot of a mystery, doesn't it? Well, in a way it is. But this is a true story of how we came to know about radioactivity.

Today people use radioactivity to treat[3] cancer, study fossils[4], and even power[5] submarines[6]. However, radioactivity was discovered less than 150 years ago. In the late 1800s, a scientist named Marie Curie was learning a lot about atoms and radioactivity. But she wasn't the only one. The ideas of many other scientists contributed[7] to her work and our understanding of radioactivity.

Building knowledge about science can be a surprising process[8]. It does involve[9] great new ideas, but hard work and good luck often play just as big a role. So let's step back in time to the 1800s. What was life like when our story begins?

1. accidental	*adj.*	偶然（发生）的	6. submarine	*n.*	潜水艇	10. Wilhelm Roentgen	威廉·伦琴（德国物理学家）
2. poison	*v.*	使受危害	7. contribute	*v.*	作出贡献	11. Henri Becquerel	亨利·贝可勒尔（法国物理学家）
3. treat	*v.*	医治	8. process	*n.*	过程		
4. fossil	*n.*	化石	9. involve	*v.*	需要		
5. power	*v.*	给……提供动力					

Wilhelm Roentgen[10]
A careful scientist

Henri Becquerel[11]
A curious researcher

Life in the 1800s

On cold winter nights in the 19th century, most families gathered[1] around the stove or the fireplace to keep warm. Educated[2] people read books by lamplight and candlelight. There was much talk about an American fellow[3] named Thomas Edison[4]. People said that his new invention—the electric light bulb—could brighten a room with the flick[5] of a switch[6].

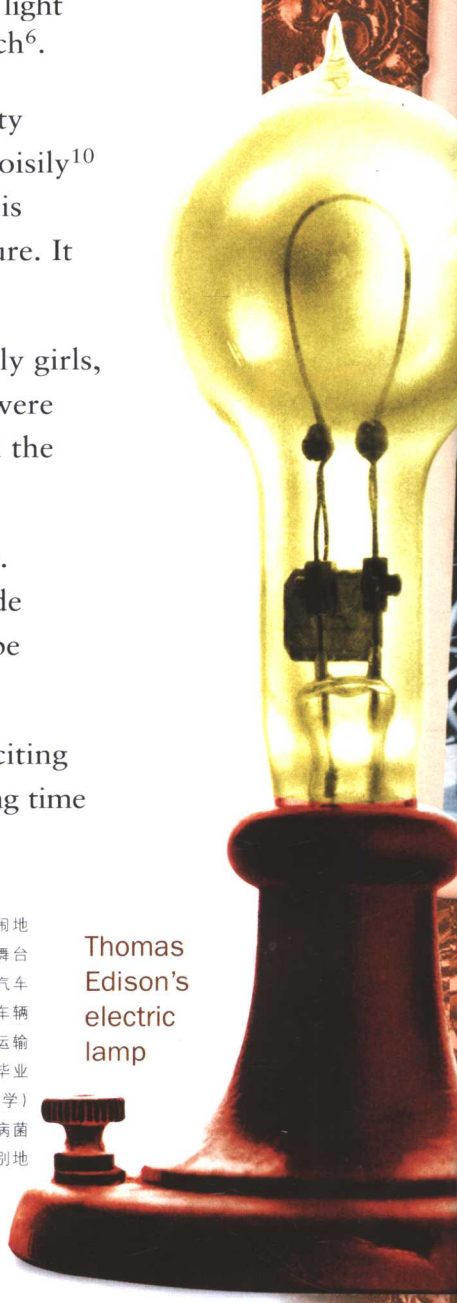
Horses and buggies[7] carried people along crowded[8] city streets. A new machine, however, would soon chug[9] noisily[10] onto the scene[11]. People called it the automobile[12]. This "horseless carriage[13]" would rule the roads of the future. It would change transportation[14] forever.

Education was important, but many students, especially girls, did not graduate[15] from high school. In fact, women were not allowed to attend[16] college in many places around the world.

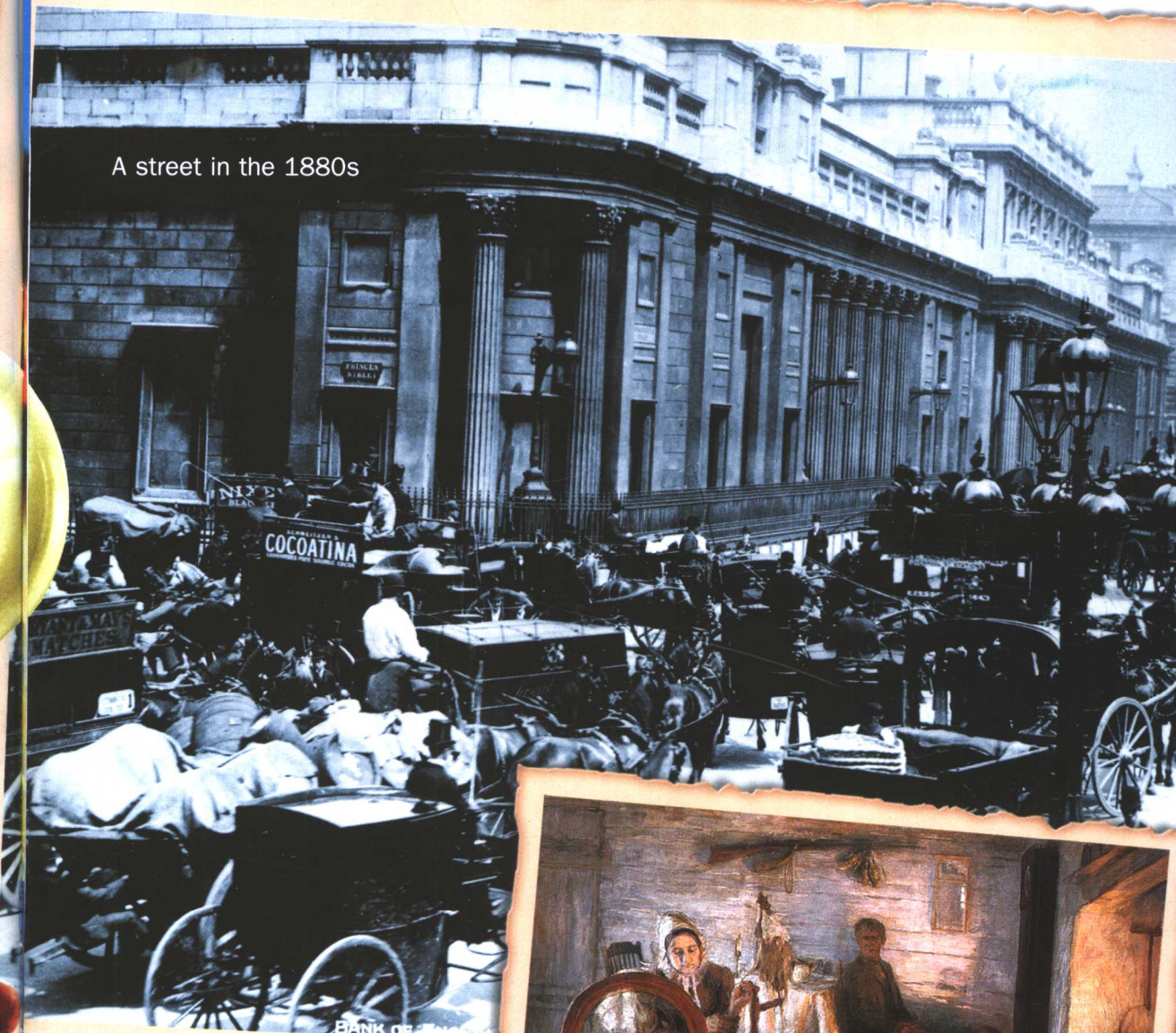
New medical discoveries were being made all the time. Doctors were starting to understand how germs[17] made people sick. They even said that some illnesses could be prevented if people washed their hands more often.

Scientists raced to find new information. It was an exciting time to do research. And it was a particularly[18] exciting time to be a chemist named Dmitry Mendeleyev.

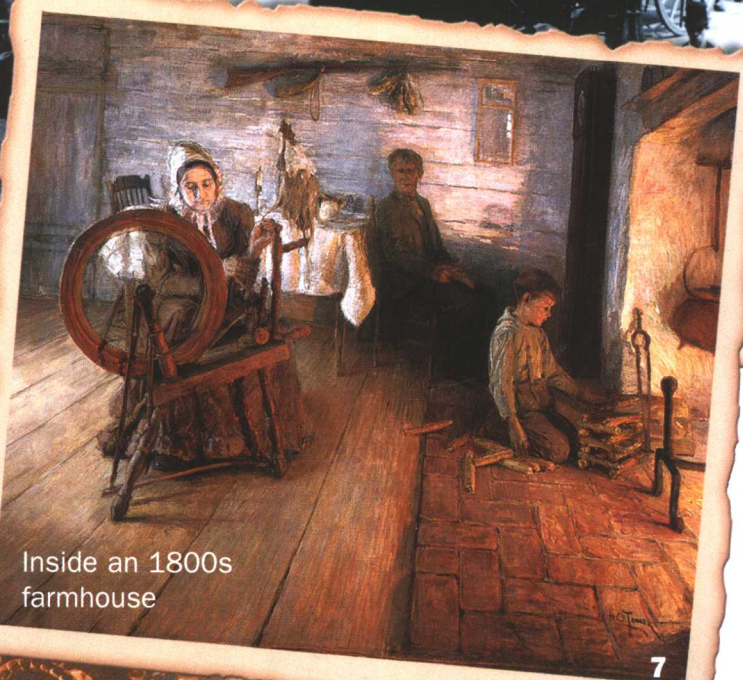
1. gather	*v.*	聚集	10. noisily	*adv.*	喧闹地
2. educated	*adj.*	受过教育的	11. scene	*n.*	〈喻〉舞台
3. fellow	*n.*	人	12. automobile	*n.*	汽车
4. Thomas Edison		托马斯·爱迪生（美国发明家）	13. carriage	*n.*	车辆
			14. transportation	*n.*	运输
5. flick	*n.*	啪嗒声	15. graduate	*v.*	毕业
6. switch	*n.*	开关	16. attend	*v.*	上（大学）
7. buggy	*n.*	轻便马车	17. germ	*n.*	病菌
8. crowded	*adj.*	拥挤的	18. particularly	*adv.*	特别地
9. chug	*v.*	发着嘎嚓声行驶			



Thomas Edison's electric lamp



A street in the 1880s



Inside an 1800s farmhouse

Chapter 1 第一章

A Russian Scientist Arranges the Elements

排列化学元素的俄国科学家

Dmitry Mendeleyev taught chemistry at a university in St. Petersburg[1], Russia. He was so interested in his work, he often paid little attention to anything else—including himself. It was quite common to see Professor[2] Mendeleyev with wild long hair, a scraggly[3] beard[4], and messy[5] clothing. He didn't care. He was thinking!

1. St. Petersburg		圣彼得堡
2. professor	*n.*	（大学）教授
3. scraggly	*adj.*	蓬乱的
4. beard	*n.*	络腮胡子
5. messy	*adj.*	邋遢的

University of St. Petersburg, Russia

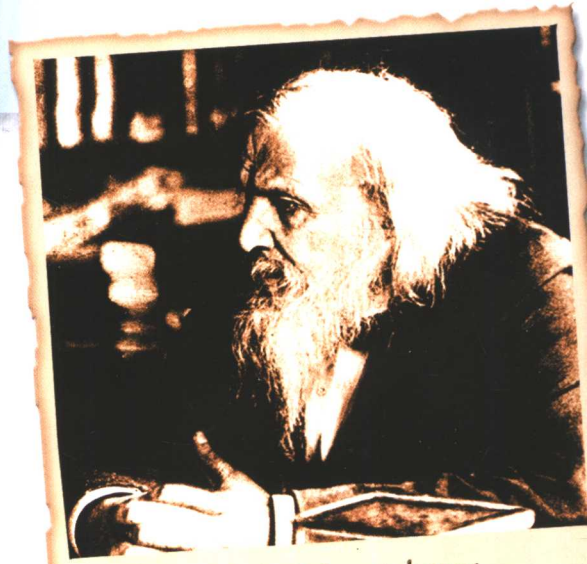
The Expert[1] on Elements

Dmitry Mendeleyev was born in Tobolsk[2], Siberia[3]. He grew up in a large family with 13 brothers and sisters. Dmitry was the youngest.

Mendeleyev's mother ran a glass factory to support[4] the family. Dmitry used to spend time watching the glass being made. He was a curious boy and asked many questions.

When Dmitry was in his early teens[5], hard times struck[6]. Dmitry's father died, and the glass factory burned to the ground. But Dmitry's mother was still strong. She decided to take Dmitry to a big city. She knew he needed a college education to be successful.

At the University of St. Petersburg, Dmitry studied chemistry. He was particularly interested in the elements—substances[7] made up of only one kind of atom. People had been studying elements, such as iron and gold, since ancient times. They knew that different elements, or combinations[8] of elements, made up everything in the world—just as different letters, or combinations[9] of letters, make up every word in the English language.



Dmitry Mendeleyev

In the 1860s, 63 elements had been discovered—and Dmitry Mendeleyev collected information on all of them. He didn't know it at the time, but his work set the stage[10] for many exciting discoveries.

1. expert	*n.*	专家
2. Tobolsk		托博尔斯克
3. Siberia		西伯利亚
4. support	*v.*	供养
5. teens	*n.*	[复]（年龄）十几岁（指13-19岁）
6. strike	*v.*	（疾病等）突然侵袭
7. substance	*n.*	物质
8. combination	*n.*	化合物
9. combination	*n.*	组合
10. stage	*n.*	舞台

Predicting[1] the Future

Mendeleyev spent many years gathering[2] information about the elements. He did research on his own. He also studied the work of other scientists from all over the world. His eagerness[3] to share information was important. Sometimes, scientists in Russia did not communicate with scientists elsewhere in Europe. But Mendeleyev needed as much information as he could get.

Dmitry's hard work paid off. He began to see patterns[4] among the elements. He suspected[5] that elements could be grouped together. Finally, in 1869, Dmitry Mendeleyev unveiled[6] an organized[7] table of elements. He listed the 63 known elements of the time. He also left blank[8] spaces for three more elements that he predicted would one day be discovered.

Most people thought he was crazy, but it turned out that Mendeleyev was right. By 1886, three new elements had been found. They fit right into the gaps[9] that Mendeleyev had left in his table.

Mendeleyev brought order to the way that scientists thought about the elements. He also proved that many things were yet to be discovered.

A child in Poland[10] grew up to be inspired[11] by Mendeleyev's work. As an adult[12], this scientist added two new elements to Mendeleyev's table. This person also became the first ever to be awarded[13] two Nobel Prizes[14]. These achievements alone were amazing[15]. The fact that this scientist was a woman was absolutely[16] astonishing[17].

1. predict	*v.*	预言
2. gather	*v.*	收集
3. eagerness	*n.*	渴望
4. pattern	*n.*	模式
5. suspect	*v.*	猜想
6. unveil	*v.*	向公众透露
7. organized	*adj.*	安排有序的
8. blank	*adj.*	空白的
9. gap	*n.*	空白处
10. Poland		波兰
11. inspire	*v.*	激励
12. adult	*n.*	成年人
13. award	*v.*	授予（奖品）
14. Nobel Prize		诺贝尔奖
15. amazing	*adj.*	令人吃惊的
16. absolutely	*adv.*	绝对地
17. astonishing	*adj.*	令人惊讶的

Drawing of Dmitry Mendeleyev

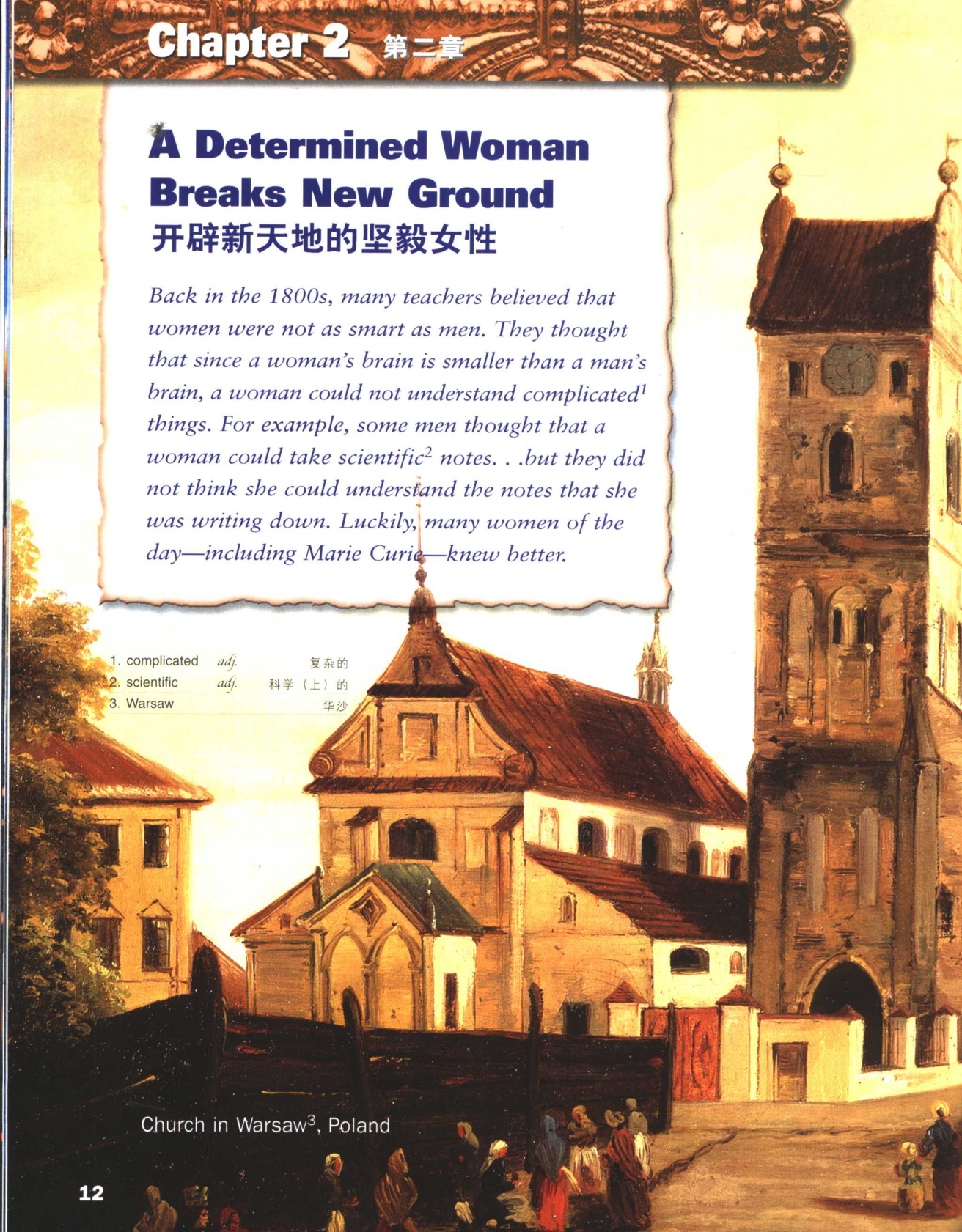
Dmitry Mendeleyev's periodic table[1] is now carved into the side of a technical[2] school in Russia.

1. periodic table 周期表
2. technical *adj.* 技术的

A Determined Woman Breaks New Ground
开辟新天地的坚毅女性

Back in the 1800s, many teachers believed that women were not as smart as men. They thought that since a woman's brain is smaller than a man's brain, a woman could not understand complicated[1] things. For example, some men thought that a woman could take scientific[2] notes. . .but they did not think she could understand the notes that she was writing down. Luckily, many women of the day—including Marie Curie—knew better.

1. complicated *adj.* 复杂的
2. scientific *adj.* 科学（上）的
3. Warsaw 华沙



Church in Warsaw[3], Poland

An Early Love of Learning

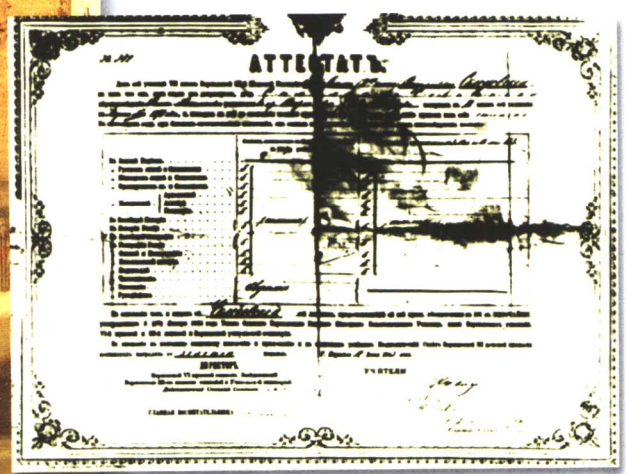
Marie Curie was born Marya Sklodowska on November 7, 1867, in Warsaw, Poland. Everyone called her Manya. At this time in history, Russia ruled Poland, and the official[1] language of the country was Russian. Manya and her friends had to do their schoolwork in Russian—not in their native[2] language of Polish. Sometimes the Polish students got low grades from their Russian teachers.

Manya (in the center) with her brother and sisters

Manya and her brother and three sisters were bright. Their father, a teacher, encouraged them to read and ask questions. He brought books home, and he talked about science and history. He wanted his children to be curious about the world.

Manya loved to learn. She did well with her studies. She graduated from high school at age 15 with a medal[3] for being the best in her class. Manya had big plans to continue her education. She also had a big problem. Universities in Poland did not accept women.

1. official	*adj.*	官方的
2. native	*adj.*	出生地（或出生国）的
3. medal	*n.*	奖牌
4. diploma	*n.*	毕业文凭
5. secondary school		中等学校

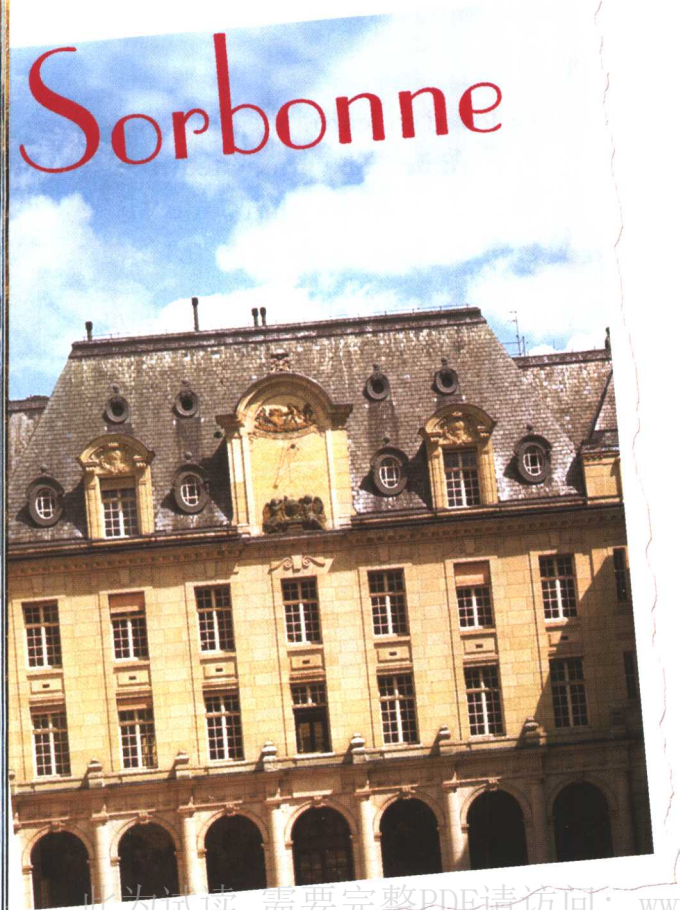


Manya received this diploma[4] when she graduated from secondary school[5].

Struggling[1] for an Education

At least one university in Europe did admit[2] women. It was called the Sorbonne[3], and it was located[4] in Paris, France. Both Manya and her sister Bronya made up their minds. They wanted to attend the Sorbonne.

Going to the university was expensive. The girls decided that both would save money to send Bronya to school first. Then, after Bronya graduated, Bronya would work to help pay for Manya's education.



The world-famous Sorbonne

While she was in Warsaw working to save money, Manya attended a secret night school called the "Floating University[5]." Here, educated Polish people shared their knowledge with each other. They had hopes that Poland would one day be free of Russian rule. If she were caught at the school, Manya knew she could be arrested[6] and sent to prison. But her desire[7] to learn was stronger than her fear of punishment.

Manya also studied secretly at a museum in Warsaw, where her cousin taught science to young Polish students. At the museum, Manya did her very first chemistry experiments. This laboratory work was exciting to Manya. Her interest in science began to grow.

1. struggle	*v.*	奋斗
2. admit	*v.*	准许……进入
3. Sorbonne		巴黎大学
4. locate	*v.*	使……坐落于
5. Floating University		自由大学
6. arrest	*v.*	逮捕
7. desire	*n.*	渴望