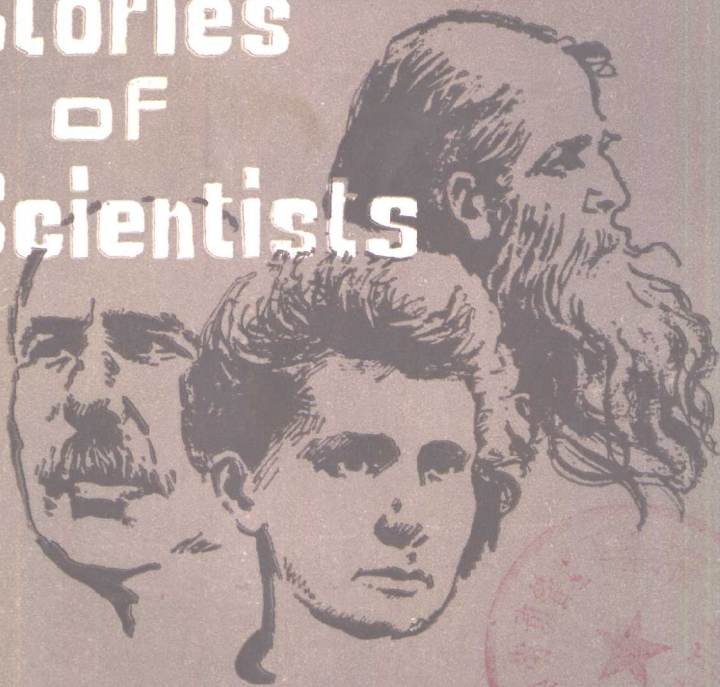


# Stories of Scientists



## 科学家传记故事

——英汉对照阅读材料

哈尔滨工业大学出版社

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哈尔滨工业大学英语教研室编

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## 内 容 提 要

本书取材于原文传记故事，未做删动，保持了原文面貌及风格。文字流畅、通俗易懂、有趣味性、有一定量词汇及语法现象，适于大专院校学生及工程技术人员自学、阅读之用。文后附有译文及注释，供读者对照、查阅。

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## 前 言

本书共有二十九篇文章，均系世界著名科学家传记性故事。原文趣味性强、文字流畅、有一定量的科技词汇及较全的语法现象，适于各高等院校学生、科技工作人员、业余大学及函授学院学生英语阅读之用。为便于对照阅读，我们除将原文译为中文附在各篇文章之后，并加了必要的注释。

参加本书编写工作的有（按文章排列顺序）张育华、傅芷山、肖乔、孙苏荔、安德惠、马甦。由文涛副教授审阅。

在编写过程中，由于时间仓促，难免有不足之处，敬请读者批评指正。

编 者

1985年元月

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## 1. ARISTOTLE<sup>1</sup>

PEOPLE WHO LIVED thousands of years ago believed the Earth to be flat<sup>2</sup>, which is, perhaps, not surprising when we remember that they never travelled very far from home. But more than 300 years before the birth of Christ<sup>3</sup>, a Greek scientist named Aristotle showed that the world must be a globe. He reached this conclusion because he noticed that when there was an eclipse of the Moon, the Earth's shadow fell across the face of the Moon and this shadow was curved, not straight. He knew that only a curved object can throw a curved shadow, so therefore the Earth must be a globe with a curved surface.

Aristotle, who was born in 384 B.C.<sup>4</sup>, always believed in looking very carefully at things before starting to put forward<sup>5</sup> ideas about them. He believed in<sup>6</sup> what we now call 'practical observation', and he was so good an observer that he became the cleverest of all the scientists of ancient Greece, and for hundreds of years people followed his teaching. His father was physician to the king of Macedon<sup>7</sup>, and Aristotle, when he was 18, went to Athens<sup>8</sup> to study. He studied under the great teacher Plato<sup>9</sup>. He stayed there for many years, and became so well known that when Philip, King of Ma-

cedon, wanted a tutor for his son Alexander, he sent for Aristotle. When Alexander grew up, Aristotle returned to Athens. There, he decided not to join the main school of learning (the Academy<sup>10</sup>), but to found one of his own, called the Lyceum<sup>11</sup>. This was because he wanted to study subjects such as botany and biology, and the Academy was concerned chiefly with mathematics and astronomy.

Aristotle wrote many books, so we know a great deal about his work. He was the first person to make really careful records of the behaviour of animals and of plants. He would never give an opinion without collecting all the facts he could; he would never 'jump to conclusions', but always wanted to find reliable evidence before making up his mind. Some of his ideas later proved to be<sup>12</sup> wrong; for example, he believed that the Earth must lie in the middle of the universe, with the Sun and stars revolving round it. All that he could observe in the sky led him to this opinion, for he lived in the days before there were telescopes. Now we know, of course, that the Earth is one of the planets revolving round the Sun.

Aristotle was not only a scientist; he was deeply interested in the behaviour of people. He thought out all his ideas very carefully, and he wrote a book about politics and education. He wrote that it was the duty of a government to teach citizens to respect the law, and to see that justice was done. But Aristotle did not believe that all men are equal: some men are cleverer than others, and will naturally become



leaders, however equal their opportunities are. Because he thought this, he did no object to some people being slaves. In Athens, at that time, the Greek citizens owned slaves.

While Aristotle was teaching at the Lyceum, his pupil Alexander had been making himself the most powerful man in the world, conquering all Greece, Persia<sup>13</sup>, and even reaching India. But when in 323 B.C. Alexander died, Aristotle lost his most powerful supporter. There were many people in Athens who disliked Aristotle, and as soon as Alexander was dead, Aristotle knew that he was no longer safe. Remembering what had happened to the great teacher Socrates<sup>14</sup>, he was wise enough to leave the city with some of his pupils before his enemies could attack him. However, he died the following year (322 B.C.) when he was 62.

After his death Aristotle's reputation grew greater and greater. He became regarded as the authority on all scientific matters for more than 1,000 years, and it was only in the 17th century that people began seriously to question some of his ideas. In spite of<sup>15</sup> this, we know that we owe<sup>16</sup> a great deal to him. He not only made many scientific discoveries, but, what was more important, he taught scientists how to think. What he said, in effect<sup>17</sup>, was, 'Never make up your mind before you have found out all the facts', and this is just as important today as it was in Aristotle's own time.

## 1. 亚里士多德

几千年前的人都认为地球是扁平的。如果我们还记得他们是从来不远离家门的话，那么对此也许就不会感到惊奇了。但是，在耶稣诞生前三百多年，有一位名叫亚里士多德的希腊科学家，就曾提出过，地球肯定是一个球体。他之所以能得出这个结论，是由于他发现，在月蚀时，地球的阴影落到月球的表面，这个阴影是弧形的，而不是直线的。他懂得，只有弧形的物体才会投下弧形的影子。因此，地球必然是个具有弧形表面的球体。

亚里士多德生于公元前384年。他总认为必须对某些事物仔细观察之后，才能对这些问题提出看法。他所坚信的正是我们今天所说的“实际观察”。他是一位优秀的观察者，这使他成为古希腊最有才智的科学家，数百年间，人们一直遵循着他的教导。他的父亲是马其顿王的医生。亚里士多德十八岁时到雅典去求学。在伟大导师柏拉图指导下学习。他在那里住了多年，很有名望，因此马其顿王菲利普为儿子亚历山大请家庭教师时，便去请了亚里士多德。亚历山大成人后，亚里士多德回到雅典。在那里，他没有进柏拉图的学院，而是决定自己建立一所书院。他这样做，是因为他想研究诸如植物学和生物学这些学科，而学院则主要是研究数学和天文学。

亚里士多德写了很多书，因此，我们对他所做的一切都

十分了解。他是第一个对动物和植物的习性做详细记录的人。不搜集到一切能够获得资料，他从不谈看法，也不“急于做出结论”，而总是在找到可靠的论据之后，再确定他的观点。他的一些观点后来证明是错误的，例如，他认为地球肯定位于宇宙的中心，而太阳和星星则绕地球运行。他对天空所做的观察，使他得出这样的结论。因为他所处的时代还没有望远镜。当然，现在我们都知道，地球是绕太阳运行的行星之一。

亚里士多德不仅是位科学家，他对人们的行为也深感兴趣。他的所有观点都是经过深思熟虑的；他还著有关于政治与教育方面的书籍。他写道：政府的职责就在于教育公民遵守法律并使正义得以伸张。但是，亚里士多德并不认为一切人都是平等的：尽管人们的机遇相同，但因某些人较另一些聪明，那么，自然就会成为领导者。由于有这种思想，对于一些人做为奴隶，他也并不反对。那时在雅典，希腊市民都拥有奴隶。

当亚里士多德在书院讲学时，他的弟子亚历山大已成为世上最大的强权者，并征服了整个希腊、波斯、甚至到达了印度。但是在公元前323年亚历山大逝世了，亚里士多德失掉了最有力的支持者。在雅典，有很多人憎恨亚里士多德；他料到亚历山大一死，他就不会再是安全的了，伟大导师苏格拉底的遭遇记忆犹新。于是趁敌对者还没来得及攻击时，他便明智地率领几名弟子离开了这座城市。然而，就在第二年（公元前323年），当他62岁时，便逝世了。

亚里士多德逝世后，他的威望与日俱增。在一千多年期间；他被尊崇为一切科学问题的权威。只是到了十七世纪，人们才开始认真地对他的某些观点提出疑问。尽管如此，我

们仍应十分感激他。他不仅有許多科学发现，尤为重要的是，他教导科学家们如何思考问题。实际上，他所说的：“在你发掘出全部事实之前，绝不要做任何决定”这一观点，在今天仍同亚里士多德所处的时代一样重要。

### Notes:

1. Aristotle [ˈæristɒtl], [ˈæərə,statl] 亚里士多德 (公元前384—322), 古希腊大哲学家。
2. believe ... to be ... 认为……是……  
to be 是宾语补足语。  
... believe the Earth to be flat ... 认为地球是扁平的  
I believe him to be right. 我认为他是正确的。
3. before the birth of Christ 耶稣诞生前 (公元前)
4. B.C. = Before Christ 公元前
5. put forward 提出
6. believe in 坚信; 信奉
7. Macedon [ˈmæsidən], [ˈmæse,dən] 马其顿王国
8. Athens [ˈæθinz] 雅典 (希腊首都)
9. Plato [ˈpleitəu] 柏拉图 (公元前427? —347), 古希腊哲学家。
10. the Academy [əˈkædəmi] n. 学会, 学院
11. Lyceum [ˈlaɪsi(:)əm] n. 书院、文苑 (古希腊哲学家亚里士多德讲学的地方); 亚里士多德学派。
12. prove vi. 证明是, 表明是。  
proved to be wrong 证明是错误的 (prove 是系动词)  
The method proved (to be) highly effective. 这方法

证明是非常有效的。

13. Persia [ˈpɜːʒə] 波斯，即伊朗（亚洲西南部国家）

14. Socrates [ˈsɒkrətiːz] n. 格苏拉底（公元前469—399），古希腊哲学家。

15. In spite of ... 尽管

16. owe [ou] vt. 欠（债等）；应该向（某人）付出，感激

We owe a great deal to him. 我们大大感激他。

I owe for your help. 由于你的帮助，我得感激你。

I owe a great deal to my comrades. 我该大大感激同志们。

17. in effect 实际上，事实上

## 2. ARCHIMEDES<sup>1</sup>

RATHER OVER 2,000 years ago, the King of Syracuse<sup>2</sup>, a town in Sicily<sup>3</sup>, wanted to find out whether the new crown which his goldsmith had made was of pure gold. It was very skilfully and beautifully made and looked just like<sup>4</sup> real gold; it weighed the same as the piece of gold that the King had given to the goldsmith. But the King suspected that the crafty goldsmith had cheated him by mixing silver with the gold, and keeping some of the gold for himself. A crown made of silver and gold mixed together would look very much like a pure gold one—so long as<sup>5</sup> there was not too much silver in it.

The King did not know how to find out what his crown was made of without melting it down, and he did not want to melt down his beautiful crown. So he decided to ask the advice of the cleverest man in Syracuse, a Greek named Archimedes. Archimedes was a scientist, also he was a friend of the King's, and could certainly be trusted.

Archimedes went away from the King thinking hard. At first he could not see how to solve the problem without melting down the crown. He was still thinking about it when he went to the public baths. He got into a bath which was full

to the brim, and, of course, as soon as<sup>6</sup> he was inside the bath, some of the water spilled out over the edge. 'If I were a fatter man,' Archimedes thought, 'I would have spilled more water.' Then suddenly he jumped out of the bath, shouting 'Eurcka! Eurcka!', which is Greek for 'I've solved it! I've solved it!' He was so excited that he ran home without remembering that he had not put his clothes on!

Archimedes was excited because the water spilling out of his bath had shown him how to solve the King's problem. He knew that a piece of silver weighing, say<sup>8</sup>,  $1/2$  kilogramme or 1 lb would be bigger than a piece of gold of the same weight; it would have what we now call a greater volume. So if he put the silver into a bowl full of water, more water would spill out than if he put the piece of gold in—just as a big man spills more water out of a full bath than a small man will do. A mixture of gold and silver would spill less water than pure silver, but more water than pure gold.

So Archimedes weighed the crown. Then he took a piece of gold of exactly the same weight, and tested each in a bowl full of water. He found that the crown spilled much more water than the piece of gold did; so he knew that the crown could not be made of pure gold. The King had been right; the goldsmith was a cheat.

Archimedes then set to work<sup>9</sup> to discover just how much silver there was in the crown. This time he took a piece of pure silver, and put it into the bowl; he compared the amount of water it spilled with the amount that had been spilled

by the gold and by the crown. In this way he could work out how much of each metal was in the crown. When he had finished, he went to the King and gave him the answer. The King was delighted; he rewarded Archimedes, and punished the wicked goldsmith.

Archimedes went on experimenting by putting different things into the water and measuring their 'displacement'—that is, how much water they spilled. Next he experimented with things which floated, and he soon found that floating things displace exactly the same weight of water as they themselves weigh. This was a useful way of measuring the size and weight of large bodies such as ships, for it is much easier to measure the amount of water which flows out of a dock when you put a ship into it than to weight the ship. The principle is still used today. For instance, the displacement of the liner *Queen Elizabeth I*<sup>10</sup> is about 80,000 metric tonnes, which means that the ship itself weighs 80,000 tonnes. We call this idea the 'Archimedes' Principle'.

This was only one of Archimedes' many discoveries, for he was a very good mathematician and astronomer. He invented the Archimedes Screw, which is a sort of spiral pump used for pumping water out of ships. Also he studied the principle of lifting heavy things by means of levers, and he said that if he could have a long enough lever, with somewhere to rest it, he could even move the world!

When Archimedes was an old man, the Romans attacked Syracuse. Archimedes invented machines for defending the city.



and he built huge catapults which could be used to throw burning missiles on to the enemy ships. But in spite of this the Romans captured Syracuse. The Roman commander had given special orders that Archimedes was not to be harmed, for even though he had fought against Rome, everybody respected him. But when they entered the city, one of the soldiers found Archimedes working out a mathematical problem and, because he did not give his name, the soldier killed him. This was a great tragedy, for Archimedes was one of the very cleverest men of the ancient world.

## 2. 阿基米德

早在二千多年以前，西西里的一个城市——叙拉古的国王想查出他的金匠制做的新王冠是否用纯金制成的。这顶王冠制做得美丽、精巧，看来犹如真金一般，称起来又与国王给金匠的那块金子重量完全相同。但是国王怀疑这一狡诈的金匠会私自留下一部分金子，而掺入银子来欺骗他，只要其中银子不太多，金与银混合制成的王冠就会象纯金的一样。

国王不知道怎样才能不必熔化王冠，就可查出它是什么材料制成的，因为他并不愿使这顶美丽的王冠熔化掉。为此，他决定请教叙拉古最聪明的人，一位名叫阿基米德的希腊人。他是位科学家，又是国王的好友，当然是可以信得过的。

阿基米德从国王那里出来，努力地思索着。起初，他不知