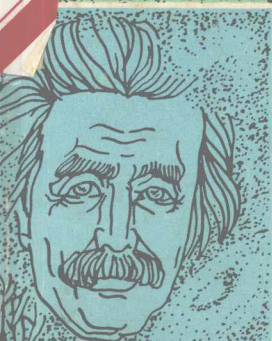


Famous Scientists



著名科学家的故事

上海译文出版社

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吉恩·贝瑟尔 原著

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英汉对照

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译者的话

本书原名《著名科学家》(*Famous Scientists*), 由美国“动脑筋”丛书出版社于1964年出版, 后来又由英国环球出版社重新编排后于1967年在英国出版, 我们采用的是该出版社1967年版的1976年印刷本。本书以青少年为主要发行对象, 用词浅近, 句子结构简单, 叙述简明易懂, 适合于我国高中学生、理工科大学低年级学生及具有同等英语阅读能力的读者阅读。

译者将每篇都译成汉文并加以注释, 俾使读者能对照原文加深理解, 对英语自学者可能有所裨益。

原文在涉及科技知识时, 个别地方似有叙述不严密、间或内容错误之嫌, 译者通过加注或在译文中补词的方法作了一些说明, 但由于才疏学浅, 遗漏乃至误译恐怕难免, 切望读者指正。

一九八一年一月

Introduction

In an age when science touches the lives of everyone, it is surprising to discover that many persons do not understand what science is. To remedy this, it has been suggested that we say *science is what scientists do*. This is an intriguing idea. What do scientists do? To get the answer, we must examine the lives and work of scientists. This is exactly what *Famous Scientists* does.

From a study of the lives of scientists, we learn that science is many interrelated things. We see that scientists are often doubters of traditional answers. They are curious investigators. They do not easily give up¹ their search for answers to difficult questions.

Above all² scientists use their heads. They think. They collect evidence and analyze it. They check it carefully in many ways. Sometimes in the process of thinking long and hard about a problem, scientists have important insights — mental leaps — toward the solutions. They test these insights and encourage other scientists to test them.

They make predictions. If their predictions do not work out, they try other reasonable

1. give up: 放弃。 2. Above all: 首先; 最主要的是。

序 言

在科学涉及到每个人的生活的时代里，发现很多人竟然不懂得什么是科学，这是令人吃惊的。有人为了纠正这种状况，建议大家说科学就是科学家所从事的工作。这倒是个使人感兴趣的主意。科学家从事什么工作呢？要想得到这个问题的答案，我们就必须研究科学家的生平和工作。这正是《动脑筋》丛书中的这本《著名科学家》所要做的。

通过研究科学家的生平，我们了解到，科学是很多互相关联的事情。我们发现，科学家常常是传统观念的怀疑者。他们是好奇的调查研究者。他们不轻易放弃寻找解开难题的答案。

最重要的是，科学家们动脑筋。他们思考问题。他们收集证据予以分析，并从多方面来仔细地加以检验。有时候，在长时间地苦思冥想一个问题的过程中，科学家们会对其解答方法有重要的领悟——即思想飞跃。他们验证这些领悟，并鼓励其他科学家也来验证。

他们作出预言。假如他们的预言没有兑现，他们就再作合乎情理的预言。他们思想通达；当发现新的、确切的资料时，他们乐于改变自己的观点。他们总是企图对宇宙中发生的事情作出越来越精确的描述和解释。科学知识就是这样增长的。

predictions. They are open-minded and willing to change their ideas when new and accurate information is discovered. Always they attempt to make more and more accurate descriptions and explanations of events in our universe. Thus, scientific knowledge grows.

Evidences of all these characteristics of scientists at work³ are found in *Famous Scientists*. Reading this book at home or at school will help pupils know what science is by learning what scientists do.

Paul E. Blackwood

3. of all ... at work: 介词 of 的宾语是一个复合结构 (名词短语 all these characteristics of scientists + 介词短语 at work).

在这本《著名科学家》里，可找到科学家的所有这些特点在起作用的实例。在校内或校外阅读本书，将能帮助学生通过了解科学家是干什么的而懂得什么是科学。

保罗·E·布莱克伍德

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What is the artist?

At Cape ... a control tower ... she rises into the ...

In South America, a young lady kneels in a dark cave, carefully brushing dirt from a gleaming human skull.

In a New York laboratory, a man in a white coat skillfully extracts venom from the fangs of a poisonous snake.

These people could be characters in an exciting adventure story. Actually, they're real people. Each one is a scientist working hard at his own special job. Each one is looking for facts that will solve a particular problem.

1. Cape (Cape) Florida: cape [keɪp] n. 海角; 岬. Ganav- and [ˌɡænəvən] (地名) 未定; Florida [ˈflɒrɪdə] (地名) 佛罗里达州 (美国南部的一个州); in a white coat 穿白色制服.



What is a Scientist ?

At Cape Canaveral, Florida,¹ two men in a control tower watch anxiously as a huge missile rises into the air.

In South America, a young lady kneels in a dark cave, carefully brushing dirt from a gleaming human skull.

In a New York laboratory, a man in a white coat² skilfully extracts venom from the fangs of a poisonous snake.

These people could³ be characters in an exciting adventure story. Actually, they're real people. Each one is a scientist, working hard at his own special job. Each one is looking for facts that will solve a particular problem.

1. Cape Canaveral, Florida: cape [keip] *n.* 海角, 岬。Canaveral [kɑ:'nævərəl] (地名)卡纳维拉尔。Florida ['flɔridə] (地名)佛罗里达(美国东南部的一个州)。 2. in a white coat: 穿着白色的外衣。



科学家是干什么的？

在佛罗里达的卡纳维拉尔角，当一枚巨大的导弹腾空而起时，控制塔内的两个人紧张地注视着。

在南美洲，一名年轻妇女跪在黑暗的洞穴里，仔细地把尘土从一个闪发着微微磷光的骷髅上刷掉。

在纽约的一间实验室里，一名穿白外套的男子熟练地从毒蛇的毒牙中取出毒液。

这些人可能是惊险故事中的人物。但事实上，他们却是真实的人。他们个个都是科学家，致力于各自的专业工作。个个都在寻找能解答某个特定问题的**事实**。

Science is a careful, systematic search for facts. Scientists are investigators. They ask questions about the universe and the natural laws that govern it. By observing and experimenting they try to find out the answers to those questions.

Great scientific discoveries seldom happen by accident⁴. They are nearly always the result of keen observation, accurate experiments and a great deal of⁵ hard work. Although all scientists have their own individual ways of working, they usually follow a general pattern known as the *scientific method*.

It starts with *observation*. The scientist is a trained observer. After studying all the *known* facts about the problem he's working on, he gathers additional facts through his own personal observations. From them he develops an idea or *hypothesis* that he hopes will explain or solve the problem.

Next, he *experiments*. He makes careful tests to find out just how true his hypothesis is. Very often, he discovers that it is wrong. But sometimes he is able to collect enough evidence to prove that his idea is right.

After his hypothesis has been thoroughly tested by many other scientists and found to be absolutely correct, it becomes known as a *law* or *principle*. All this may take months, years, or even a whole lifetime. But when it does happen, that scientist has the satisfaction of

科学就是仔细地、系统地寻找事实。科学家是研究人员。他们就宇宙和支配宇宙的自然规律提出问题，并通过观察和实验尽力找出解答这些问题的答案。

伟大的科学发现很少是偶然发生的。它们几乎总是敏锐的观察、精确的实验和大量的艰巨工作的结果。虽然科学家们都各有各的工作方式，但他们通常总是遵循一种称为科学方法的一般模式。

这种模式以观察为起点。科学家是受过训练的观察者。在研究了有关他正在探索的那个问题的全部已知事实之后，他通过自己的观察收集其他的事实。根据这些事实，他产生一种想法或假设，冀其解释或解答那个问题。

接着，他做实验。他进行细致的试验，来判断他的假设的正确程度。他常常发现自己的假设是错误的。但有时候，他能收集到足够的证据，证明自己的想法是对的。

他的假设经其他许多科学家彻底地验证过，被断定为绝对正确之后，就被称为定律或定理。这一切可能需要几个月、几年、甚至毕生的功夫。但一

-
3. could: 表示对某种可能性的猜测。不表示 can 的过去式。
4. by accident: 偶然地; 凑巧。5. a great deal of: 大量的; 很多。
6. be interested in: 对……感兴趣。