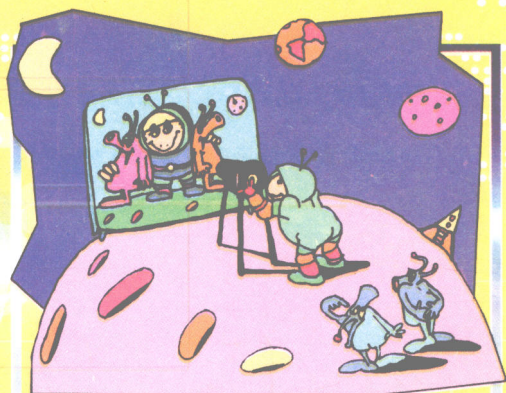


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科学家趣闻

SPEAK CHINESE ENGLISH



CHINESE ENGLISH

英汉平行对照

趣味

科普知识

北京师联教育科学研究所 编译

学苑音像出版社

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注：带“☆”内容有录音



A Brief Introduction to the Scientists and Their Achievements.

科学家及其 成就简介

① Zeno's logical paradox of Achilles and the tortoise, articulated about 425 B. C., could not be expressed in a mathematical formula for twenty-one centuries. Suppose, Zeno had said, that Achilles can run ten times as fast as a tortoise and that the tortoise has a ten-yard head start. It follows, then, he said, that Achilles can never overtake the tortoise; while Achilles covers the ten-yard difference, the tortoise will have moved ahead one yard. When Achilles covers that one yard, the tortoise will have

芝诺在公元前约 425 年提出的关于阿基利斯和乌龟的悖论, 在其后 2,100 年里一直未能用一个数学公式表示出来。芝诺说, 假定阿基利斯赛跑的速度是乌龟的 10 倍, 乌龟在阿基利斯前面 10 码处开始起跑, 芝诺说, 阿基利斯永远也追不上乌龟: 当阿基利斯跑完 10 码距离时, 乌龟又向前跑了 1 码; 当阿基利斯跑完那 1 码时, 乌龟又向前跑了 $1/10$ 码, 依此类推。可





moved on a tenth of a yard. And so on. Our senses, however, clearly show us a fast runner overtaking and passing a slow runner. The Scottish mathematician James Gregory, in the mid-1600s, was to demonstrate the existence of “*converging series*” in which an infinite number of terms added up to a finite sum. The Achilles and the tortoise paradox involved, without Zeno’s knowledge, such a converging series.

② The Greek philosopher Democritus is known today almost entirely as a result of references, often unfriendly, in the works of others. Only fragments of Democritus’ seventy-two books have survived the ages. Like all the early rationalists, “*the laughing philosopher*”

是直觉清楚地告诉我们的,跑得快的人会追上 and 超过跑得慢的人。苏格兰数学家詹姆士·格雷果利于 17 世纪中演示了“收敛级数”的存在,说明无数个条件相加会得出一个确定的数字。芝诺不知道阿基里斯和乌龟的悖论就包含了这样一个收敛级数。

今天人们几乎只是通过从其他著作中引用——常常是不友好地引用德谟克利特的话来认识这位伟大的古希腊哲学家的。多少年过去了,德谟克利特的 72 本书只有片段流传下来。和所有





had startlingly modern-sounding notions. One: The Milky Way is a vast conglomeration of tiny stars.

的早期唯理论者一样，这位“笑呵呵的哲学家”有着惊人的、类似现代人的推理。其中一条是：银河是无数颗小星的聚合。

③ Aristotle, the pupil of Plato and one of Greece's greatest philosophers, was primarily a biologist. However, the biological portion of his work was largely ignored, and his successors were mainly influenced by his theories in physics and astronomy. Centuries later, Aristotle was praised by Darwin as the wellspring from which the modern biologists Linnaeus of Sweden and Cuvier of France took their inspiration. Linnaeus (1707 - 1778) was the originator of modern scientific classification of plants and animals.

柏拉图的学生、古希腊最伟大的哲学家之一亚里士多德，首先是一位生物学家，但是他的著作中的生物学部分太多为人们所忽略。他的后继者们主要受到他在物理学和天文学方面的理论的影响。几个世纪后，达尔文赞誉亚里士多德是当代生物学家瑞典的林奈和法国的居维叶得到灵感的源泉。林奈（1707—1778）是现代动植物科学分类法的创始人。居维叶





Cuvier (1769-1832) was a pioneer in the science of comparative anatomy. (1769—1832) 是比较解剖学科学的先驱。

④ Euclid worked out virtually none of the theorems of “*Euclidean*” geometry. He was a collector of other men’s works. His great virtue was that he arranged in so logical an order the geometrical theorems known in his time that they can scarcely be improved on. 实际上欧几里得几何的公理没有一条是欧几里得得出来的。欧几里得是一个他人著作的集大成者。他的功德在于他将那个时代所知道的几何原理按逻辑条理进行编排,使这些原理几乎达到完美的地步。

⑤ Some nineteen centuries ago, the Roman naturalist Pliny the Elder (Caius Plinius Secundus) recognized earthquake warnings that today’s geophysicists also keep an eye out for: foreshock, turbidity in wells, and frightened birds. Pliny also listed an anomalous “*fog*” in an otherwise clear sky, an idea that 大约 1,900 年前,罗马博物学家大普林尼(全名 Caius Plinius Secundus)发现了今天地球物理学家们也在注意着的地震预兆:前震,井水混浊,受惊的鸟类等。普林尼还列举了晴朗的天空中一种异常的“雾”,这一看



only now is catching on as a valid signal.

法直到最近才逐渐被认为是一个有用的迹象。

Pliny the Elder (23 - 79 A. D.) was a busy man. He wrote not only a thirty-one-volume general history of Rome and a twenty-volume history of Roman warfare, but also a thirty-seven-volume natural encyclopedia, an eight-volume Latin grammar, and a six-volume manual of oratory. In addition, he was, at various times, a general and admiral, and a governor of the Roman provinces in Africa, Spain, Germany, and Gaul.

大普林尼(23—79)是一个大忙人。他不仅写了31卷罗马通史和20卷罗马战争史,还写了37卷自然百科全书,8卷拉丁语法和6卷演讲指南。此外,他还在不同的时期担任过陆海军将领,罗马帝国在非洲、西班牙、德国和高卢省的总督。



⑥ In the early 1400s, the greatest astronomer in the world was a Mongol prince, the grandson of the conqueror Tamerlane. The prince's name was Ulugh Beg. In 1428, he

15世纪初世界上最伟大的天文学家是一位蒙古王子,征服者塔梅尔兰的孙子。这位王子的名字叫乌鲁格·贝格。他于1428



built an observatory in Samarkand, and later prepared a star map and planetary tables that were the best up to that time. No one heard of him in Europe. By the time his work was translated into Latin, in 1665, the telescope had been invented and Ulugh Beg's work no longer had value.

⑦ Nicholas Copernicus, 波兰天文学家尼古拉斯·哥白尼 (1473-1543), had his hand in many (1473-1543) 涉猎的知识面很广。他创立了作为现代天文学基础的体系,认为“太阳是宇宙的中心”。他参与了货币改革的工作,研究出破损的钞票会使人将好钞票收藏起来的理论。(今天这一理论被称之为“格雷沙姆定律”, for an English economist





who was incorrectly thought to have originated the idea.) He was a canon at Frombork and was involved in diplomatic negotiations between the Poles and the Teutonic Knights of Prussia. 认为这个想法是一个叫格雷沙姆的英国经济学家首先想出来的。)他还在弗隆堡当过牧师,并参加了波兰人和普鲁士条顿骑士的外交谈判。

⑧Tycho Brahe felt it beneath the dignity of a nobleman, which he was, to write books, but he fortunately overcame this snobbish impulse and published the fifty-two-page work *De novastellar, Concerning the New Star*. The greatest naked-eye astronomer, Brahe wrote in 1572 about the flaring-out of a star that had exploded and increased enormously in brightness in the constellation of Cassiopeia. "*Tycho's star*" remained visible for a year and a half, growing brighter than Venus, before fading out. Brahe's 第谷是一位贵族,他认为写书有辱于贵族身份。可喜的是他克服了这种势利的想法,出版了 52 页的著作《关于新星》。第谷是最伟大的靠肉眼观测的天文学家,他于 1572 年写的这篇著作描述了仙后星座中的一颗恒星膨胀爆发,亮度极度增加。“第谷星”变暗之前的一年半时间里可用肉眼看到,





book struck a blow to the Aristotelian notion that the heavens were perfect and unchanging.

比金星还亮。第谷的书使亚里士多德关于星空是十全十美、没有变化的说法受到一次打击。

⑨ Galileo was forced to resign as a teacher at the University of Pisa when he gainsaid Aristotle's long-held thesis that the heavier a stone, the faster it falls. It is now acknowledged that two stones of unequal weight that are dropped from a tower at the same time will strike the ground at the same time.

伽俐略在比萨大学否定了长期为人们接受的亚里士多德关于一块石头越重落地越快的说法后,被迫辞职。今天人们公认,从一个塔上同时落下的不同重量的两块石头会同时落地。

⑩ The telescope was invented in 1608 when a young apprentice was playing games. While his master, the spectacles - maker Hans Lippershey, was away, the apprentice amused himself with lenses and

1608年,当一个年轻的学徒在玩游戏时,创造了望远镜。趁他的主人——眼镜制造商——汉斯·李普西外出时,学徒用透镜做游戏突然发现了使东西





suddenly found a combination that made things seem closer. He showed this to Lippershey, who enclosed the lenses at two ends of a tube.

⑪ It took many years for the German astronomer Johann Kepler to make his observations of the heavenly bodies and work out the computations that led to his discovery in 1609 that the planets moved in elliptical orbits. In 1973, a computer given Kepler's data performed the necessary computations in eight minutes.

⑫ One of the most famous unsolved problems in mathematics is "*Fermat's last theorem*", named for the French mathematician Pierre de Fermat (1601-1665). He wrote that he had found that a certain

的距离可以被拉近的透镜组合方式。他将这一发现告诉李普西,后者即将透镜固定在一根管子的两头。

德国天文学家约翰·开普勒花了好几年时间对天体进行观察、计算才导致 1609 年的发现:行星以椭圆形轨道远行。1973 年,开普勒的数据被输入一台计算机,只用 8 分钟就完成了必要的计算。

数学上尚未解决的著名问题之一,是以法国数学家皮埃尔·德·费马(1601—1665)命名的“费马大定理”。费马写道他发现 $x^n + y^n = z^n$ 这个式子,没有





equation, $x^n + y^n = z^n$, had no integer solution in whole numbers, except where $n = 2$. Thus, $3^2 + 4^2 = 5^2$. Fermat went on to say that he didn't have the space in his notation for the simple proof. Mathematicians have been searching for the proof for three centuries, in vain. Modern computers have shown that the equation has no solutions for all values of up to 2,000, but this is not the general proof we are still looking for.

⑬ When he was a child, Blaise Pascal once locked himself in his room for several days and would not allow anyone to enter. When he emerged, he had figured out all of Euclid's geometrical propositions totally on his own.

只有 $n = 2$ 的例外,可得出 $3^2 + 4^2 = 5^2$ 。费马接着说,他没有办法为这一观点提出简单的证明。三百年来,数学家们一直在寻找这一证明,但没有结果。现代计算机的计算已经表明在 2,000 之内该式无解,但这仍不是我们寻求的普遍证明。

布莱兹·帕斯卡小时候有一次把自己关在房间里好几天,不许任何人进去。等他从房间出来时,他独自想出了欧几里得几何的所有定律。

The seventeenth-century

17 世纪的法国数



French mathematician, physicist, philosopher, and stylist Blaise Pascal built a calculating machine and a slide rule in his childhood, laid the foundation for the modern theory of probabilities, invented the mathematical triangle that bears his name, discovered the properties of the cycloid, and advanced differential calculus. But his best-known remarks had nothing to do with science. He was the man who said that if Cleopatra's nose had been differently shaped - aquiline, for instance - or if Cromwell's bladder had not been obstructed and he had lived longer, the history of the world would have been altered.

学家、物理学家、哲学家和文体家布莱兹·帕斯卡未成年时就造出了一台计算器和计算尺,他奠定了现代概率论的基础,发明了以他的名字命名的数字三角形,发现了旋轮线的特性,发展了微积分运算。可是他最有名的话却与科学无关。他说,如果克娄巴特拉的鼻子换一个形状——比如鹰勾鼻——或者如果克伦威尔的膀胱没有阻塞而能活得更长的话,世界历史将会完全不一样。

⑭ After Sir Issac Newton died, a sealed trunk was found among his belongings containing

伊萨克·牛顿爵士死后,在他的遗物中发现了一只封着的箱子,





nearly 100,000 pages he had written on the subjects of alchemy, astrology, and the occult. 里面有牛顿写的近100,000页关于炼金术、占星术和秘学方面的文稿。

Issac Newton's only recorded utterance while he was a member of Parliament was a request to open the window. 记录在案的伊萨克·牛顿当议员时的唯一发言是请求开窗。

12
15 Olaus Roemer struggled with a puzzle in 1675. The satellites of Jupiter seemed to move around their planet at irregular times. In trying to solve the problem, the Danish astronomer found he had to assume that light traveled at a finite speed, and in so doing he was the first to work out the speed of light. The speed of sound, which is only a millionth as great, wasn't worked out for another sixty-three years. 奥劳斯·勒默在1675年为解开一个谜而苦苦思索。看上去木星的诸卫星以不规则的时间绕木星转动。这位丹麦天文学家在设法解决这个问题过程中发现,他不得不假设光线以一个固有的速度前进,结果他第一个计算出了光速。而仅为光速百万分之一的音速在63年后才被算出来。

16 The idea of a "nothing" "空白的书"不是